Nos. 00-511, 00-555, 00-587, 00-590 and 00-602

IN THE

Supreme Court of the United States

OCTOBER TERM, 2000

VERIZON COMMUNICATIONS INC., *ET AL.*,
Petitioners,

v.

FEDERAL COMMUNICATIONS COMMISSION AND THE UNITED STATES OF AMERICA, *ET AL.*,
Respondents.

On Writs of Certiorari to the United States Court of Appeals for the Eighth Circuit

JOINT APPENDIX
VOLUME II

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00-555 PETITION FOR CERTIORARI FILED SEPTEMBER 10, 2000
00-587 PETITION FOR CERTIORARI FILED SEPTEMBER 13, 2000
00-590 PETITION FOR CERTIORARI FILED SEPTEMBER 13, 2000
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FCC 96-325

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Implementation of the Local Competition Provisions in the Telecommunications Act of 1996	)	CC Docket No. 96-98
	)	
	)	
Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers	)	CC Docket No. 95-185
	)	
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FIRST REPORT AND ORDER

Adopted: August 1, 1996 Released: August 8, 1996

By the Commission: Chairman Hundt and Commissioners Quello, Ness, and Chong issuing separate statements.

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I. INTRODUCTION, OVERVIEW, AND EXECUTIVE SUMMARY

A. The Telecommunications Act of 1996 - A New Direction

1. The Telecommunications Act of 1996[1] fundamentally changes telecommunications regulation. In the old regulatory regime government encouraged monopolies. In the new regulatory regime, we and the states remove the outdated barriers that protect monopolies from competition and affirmatively promote efficient competition using tools forged by Congress. Historically, regulation of this industry has been premised on the belief that service could be provided at the lowest cost to the maximum number of consumers through a regulated monopoly network. State and federal regulators devoted their efforts over many decades to regulating the prices and practices of these monopolies and protecting them against competitive entry. The 1996 Act adopts precisely the opposite approach. Rather than shielding telephone companies from competition, the 1996 Act requires telephone companies to open their networks to competition.

2. The 1996 Act also recasts the relationship between the FCC and state commissions responsible for regulating telecommunications services. Until now, we and our state counterparts generally have regulated the jurisdictional segments of this industry assigned to each of us by the Communications Act of 1934. The 1996 Act forges a new partnership between state and federal regulators. This arrangement is far better suited to the coming world of competition in which historical regulatory distinctions are supplanted by competitive forces. As this Order demonstrates, we have benefitted enormously from the expertise and experience that the state commissioners and their staffs have contributed to these discussions. We look forward to the continuation of that cooperative working relationship in the coming months as each of us carries out the role assigned by the 1996 Act.

3. Three principal goals established by the telephony provisions of the 1996 Act are: (1) opening the local exchange and exchange access markets to competitive entry; (2) promoting increased competition in telecommunications markets that are already open to competition, including the long distance services market; and (3) reforming our system of universal service so that universal service is preserved and advanced as the local exchange and exchange access markets move from monopoly to competition. In this rulemaking and related proceedings, we are taking the steps that will achieve the pro-competitive, deregulatory goals of the 1996 Act. The Act directs us and our state colleagues to remove not only statutory and regulatory impediments to competition, but economic and operational impediments as well. We are directed to remove these impediments to competition in all

[1] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, *to be codified at* 47 U.S.C. §§ 151 *et. seq.* Hereinafter, all citations to the 1996 Act will be to the 1996 Act as codified in the United States Code unless otherwise indicated.

telecommunications markets, while also preserving and advancing universal service in a manner fully consistent with competition.

4. These three goals are integrally related. Indeed, the relationship between fostering competition in local telecommunications markets and promoting greater competition in the long distance market is fundamental to the 1996 Act. Competition in local exchange and exchange access markets is desirable, not only because of the social and economic benefits competition will bring to consumers of *local* services, but also because competition eventually will eliminate the ability of an incumbent local exchange carrier to use its control of bottleneck local facilities to impede free market competition. Under section 251, incumbent local exchange carriers (LECs), including the Bell Operating Companies (BOCs), are mandated to take several steps to open their networks to competition, including providing interconnection, offering access to unbundled elements of their networks, and making their retail services available at wholesale rates so that they can be resold. Under section 271, once the BOCs have taken the necessary steps, they are allowed to offer long distance service in areas where they provide local telephone service, if we find that entry meets the specific statutory requirements and is consistent with the public interest. Thus, under the 1996 Act, the opening of one of the last monopoly bottleneck strongholds in telecommunications -- the local exchange and exchange access markets -- to competition is intended to pave the way for enhanced competition in *all* telecommunications markets, by allowing all providers to enter all markets. The opening of all telecommunications markets to all providers will blur traditional industry distinctions and bring new packages of services, lower prices and increased innovation to American consumers. The world envisioned by the 1996 Act is one in which all providers will have new competitive opportunities as well as new competitive challenges.

5. The Act also recognizes, however, that universal service cannot be maintained without reform of the current subsidy system. The current universal service system is a patchwork quilt of implicit and explicit subsidies. These subsidies are intended to promote telephone subscribership, yet they do so at the expense of deterring or distorting competition. Some policies that traditionally have been justified on universal service considerations place competitors at a disadvantage. Other universal service policies place the incumbent LECs at a competitive disadvantage. For example, LECs are required to charge interexchange carriers a Carrier Common Line charge for every minute of interstate traffic that any of their customers send or receive. This exposes LECs to competition from competitive access providers, which are not subject to this cost burden. Hence, section 254 of the Act requires the Commission, working with the states and consumer advocates through a Federal/State Joint Board, to revamp the methods by which universal service payments are collected and disbursed.[2] The present universal service system is incompatible with the statutory mandate to introduce efficient competition into local markets, because the current system distorts competition in

[2] *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Notice of Proposed Rulemaking *and Order Establishing Joint Board*, FCC 96-93 (rel. Mar. 8, 1996) (*Universal Service NPRM*).

those markets. For example, without universal service reform, facilities-based entrants would be forced to compete against monopoly providers that enjoy not only the technical, economic, and marketing advantages of incumbency, but also subsidies that are provided only to the incumbents.

B. The Competition Trilogy: Section 251, Universal Service Reform and Access Charge Reform

6. The rules that we adopt to implement the local competition provisions of the 1996 Act represent only one part of a trilogy. In this Report and Order, we adopt initial rules designed to accomplish the first of the goals outlined above -- opening the local exchange and exchange access markets to competition. The steps we take today are the initial measures that will enable the states and the Commission to begin to implement sections 251 and 252. Given the dynamic nature of telecommunications technology and markets, it will be necessary over time to review proactively and adjust these rules to ensure both that the statute's mandate of competition is effectuated and enforced, and that regulatory burdens are lifted as soon as competition eliminates the need for them. Efforts to review and revise these rules will be guided by the experience of states in their initial implementation efforts.

7. The second part of the trilogy is universal service reform. In early November, the Federal/State Universal Service Joint Board, including three members of this Commission, will make its recommendations to the Commission. These recommendations will serve as the cornerstone of universal service reform. The Commission will act on the Joint Board's recommendations and adopt universal service rules not later than May 8, 1997, and, we hope, even earlier. Our universal service reform order, consistent with section 254, will rework the subsidy system to guarantee affordable service to all Americans in an era in which competition will be the driving force in telecommunications. By reforming the collection and distribution of universal service funds, the states and the Commission will also ensure that the goals of affordable service and access to advanced services are met by means that enhance, rather than distort, competition. Universal service reform is vitally connected to the local competition rules we adopt today.

8. The third part of the trilogy is access charge reform. It is widely recognized that, because a competitive market drives prices to cost, a system of charges which includes non-cost based components is inherently unstable and unsustainable. It also well-recognized that access charge reform is intensely interrelated with the local competition rules of section 251 and the reform of universal service. We will complete access reform before or concurrently with a final order on universal service.

9. Only when all parts of the trilogy are complete will the task of adjusting the regulatory framework to fully competitive markets be finished. Only when our counterparts at the state level complete implementing and supplementing these rules will the complete

blueprint for competition be in place. Completion of the trilogy, coupled with the reduction in burdensome and inefficient regulation we have undertaken pursuant to other provisions of the 1996 Act, will unleash marketplace forces that will fuel economic growth. Until then, incumbents and new entrants must undergo a transition process toward fully competitive markets. We will, however, act quickly to complete the three essential rulemakings. We intend to issue a notice of proposed rulemaking in 1996 and to complete the access charge reform proceeding concurrently with the statutory deadline established for the section 254 rulemaking. This timetable will ensure that actions taken by the Joint Board in November and this Commission by not later than May 1997 in the universal service reform proceeding will be coordinated with the access reform docket.

C. Economic Barriers

10. As we pointed out in our Notice of Proposed Rulemaking in this docket[3], the removal of statutory and regulatory barriers to entry into the local exchange and exchange access markets, while a necessary precondition to competition, is not sufficient to ensure that competition will supplant monopolies. An incumbent LEC's existing infrastructure enables it to serve new customers at a much lower incremental cost than a facilities-based entrant that must install its own switches, trunking and loops to serve its customers.[4] Furthermore, absent interconnection between the incumbent LEC and the entrant, the customer of the entrant would be unable to complete calls to subscribers served by the incumbent LEC's network. Because an incumbent LEC currently serves virtually all subscribers in its local serving area,[5] an incumbent LEC has little economic incentive to assist new entrants in their efforts to secure a greater share of that market. An incumbent LEC also has the ability to act on its incentive to discourage entry and robust competition by not interconnecting its network with the new entrant's network or by insisting on supracompetitive prices or other unreasonable conditions for terminating calls from the entrant's customers to the incumbent LEC's subscribers.

11. Congress addressed these problems in the 1996 Act by mandating that the most significant economic impediments to efficient entry into the monopolized local market must be removed. The incumbent LECs have economies of density, connectivity, and scale; traditionally, these have been viewed as creating a natural monopoly. As we pointed out in our NPRM, the local competition provisions of the Act require that these economies be shared

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[3] *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, Notice of Proposed Rulemaking, FCC 96-182 (rel. Apr. 19, 1996), 61 Fed. Reg. 18311 (Apr. 25, 1996) (NPRM).

[4] *See* NPRM at para. 6.

[5] *See* NPRM at n.13.

with entrants. We believe they should be shared in a way that permits the incumbent LECs to maintain operating efficiency to further fair competition, and to enable the entrants to share the economic benefits of that efficiency in the form of cost-based prices.[6] Congress also recognized that the transition to competition presents special considerations in markets served by smaller telephone companies, especially in rural areas.[7] We are mindful of these considerations, and know that they will be taken into account by state commissions as well.

12. The Act contemplates three paths of entry into the local market -- the construction of new networks, the use of unbundled elements of the incumbent's network, and resale. The 1996 Act requires us to implement rules that eliminate statutory and regulatory barriers and remove economic impediments to each. We anticipate that some new entrants will follow multiple paths of entry as market conditions and access to capital permit. Some may enter by relying at first entirely on resale of the incumbent's services and then gradually deploying their own facilities. This strategy was employed successfully by MCI and Sprint in the interexchange market during the 1970's and 1980's. Others may use a combination of entry strategies simultaneously -- whether in the same geographic market or in different ones. Some competitors may use unbundled network elements in combination with their own facilities to serve densely populated sections of an incumbent LEC's service territory, while using resold services to reach customers in less densely populated areas. Still other new entrants may pursue a single entry strategy that does not vary by geographic region or over time. Section 251 neither explicitly nor implicitly expresses a preference for one particular entry strategy. Moreover, given the likelihood that entrants will combine or alter entry strategies over time, an attempt to indicate such a preference in our section 251 rules may have unintended and undesirable results. Rather, our obligation in this proceeding is to establish rules that will ensure that all pro-competitive entry strategies may be explored. As to success or failure, we look to the market, not to regulation, for the answer.

13. We note that an entrant, such as a cable company, that constructs its own network will not necessarily need the services or facilities of an incumbent LEC to enable its own subscribers to communicate with each other. A firm adopting this entry strategy, however, still will need an agreement with the incumbent LEC to enable the entrant's customers to place calls to and receive calls from the incumbent LEC's subscribers.[8] Sections 251(b)(5) and (c)(2) require incumbent LECs to enter into such agreements on just, reasonable, and nondiscriminatory terms and to transport and terminate traffic originating on another carrier's network under reciprocal compensation arrangements. In this item, we adopt rules for states

[6] *See* NPRM at paras. 10-12.

[7] 47 U.S.C. § 251(f).

[8] *See infra*, Section IV.A.

to apply in implementing these mandates of section 251 in their arbitration of interconnection disputes, as well as their review of such arbitrated arrangements, or a BOC's statement of generally available terms. We believe that our rules will assist the states in carrying out their responsibilities under the 1996 Act, thereby furthering the Act's goals of fostering prompt, efficient, competitive entry.

14. We also note that many new entrants will not have fully constructed their local networks when they begin to offer service.[9] Although they may provide some of their own facilities, these new entrants will be unable to reach all of their customers without depending on the incumbent's facilities. Hence, in addition to an arrangement for terminating traffic on the incumbent LEC's network, entrants will likely need agreements that enable them to obtain wholesale prices for services they wish to sell at retail and to use at least some portions of the incumbents' facilities, such as local loops and end office switching facilities.

15. Congress recognized that, because of the incumbent LEC's incentives and superior bargaining power, its negotiations with new entrants over the terms of such agreements would be quite different from typical commercial negotiations. As distinct from bilateral commercial negotiation, the new entrant comes to the table with little or nothing the incumbent LEC needs or wants. The statute addresses this problem by creating an arbitration proceeding in which the new entrant may assert certain rights, including that the incumbent's prices for unbundled network elements must be "just, reasonable and nondiscriminatory."[10] We adopt rules herein to implement these requirements of section 251(c)(3).

D. Operational Barriers

16. The statute also directs us to remove the existing operational barriers to entering the local market. Vigorous competition would be impeded by technical disadvantages and other handicaps that prevent a new entrant from offering services that consumers perceive to be equal in quality to the offerings of incumbent LECs. Our recently-issued number portability Report and Order addressed one of the most significant operational barriers to

[9] Joint Managers' Statement, S. Conf. Rep. No. 104-230, 104th Cong., 2d Sess. 113 (1996) ("Joint Explanatory Statement") at 121.

[10] *See* 47 U.S.C.§ 251(c)(3)

competition by permitting customers to retain their phone numbers when they change local carriers.[11]

17. Closely related to number portability is dialing parity, which we address in a companion order.[12] Dialing parity enables a customer of a new entrant to dial others with the convenience an incumbent provides, regardless of which carrier the customer has chosen as the local service provider. The history of competition in the interexchange market illustrates the critical importance of dialing parity to the successful introduction of competition in telecommunications markets. Equal access enabled customers of non-AT&T providers to enjoy the same convenience of dialing "1" plus the called party's number that AT&T customers had. Prior to equal access, subscribers to interexchange carriers (IXCs) other than AT&T often were required to dial more than 20 digits to place an interstate long-distance call. Industry data show that, after equal access was deployed throughout the country, the number of customers using MCI and other long-distance carriers increased significantly.[13] Thus, we believe that equal access had a substantial pro-competitive impact. Dialing parity should have the same effect.

18. This Order addresses other operational barriers to competition, such as access to rights of way, collocation, and the expeditious provisioning of resale and unbundled elements to new entrants. The elimination of these obstacles is essential if there is to be a fair opportunity to compete in the local exchange and exchange access markets. As an example, customers can voluntarily switch from one interexchange carrier to another extremely rapidly, through automated systems. This has been a boon to competition in the interexchange market. We expect that moving customers from one local carrier to another rapidly will be essential to fair local competition.

19. As competition in the local exchange market emerges, operational issues may be among the most difficult for the parties to resolve. Thus, we recognize that, along with the state commissions and the courts, we will be called upon to enforce provisions of arbitrated agreements and our rules relating to these operational barriers to entry. Because of the critical importance of eliminating these barriers to the accomplishment of the Act's pro-competitive

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[11] *Telephone Number Portability*, CC Docket No. 95-116, First Report and Order and Further Notice of Proposed Rulemaking, FCC 96-286 (rel. July 2, 1996) (*Number Portability Order*). Consistent with the 1996 Act, 47 U.S.C. §251(b)(2), we required LECs to implement interim and long-term measures to ensure that customers can change their local service providers without having to change their phone number. Number portability promotes competition by making it less expensive and less disruptive for a customer to switch providers, thus freeing the customer to choose the local provider that offers the best value.

[12] NPRM paras. 202-219.

[13] Federal Communications Commission, STATISTICS OF COMMUNICATIONS COMMON CARRIERS 1994-95, at 344, Table 8.8; Federal Communications Commission, REPORT ON LONG DISTANCE MARKET SHARE, Second Quarter 1995, at 14, table 6 (Oct. 1995).

objectives, we intend to enforce our rules in a manner that is swift, sure, and effective. To this end we will review, with the states, our enforcement techniques during the fourth quarter of 1996.

20. We recognize that during the transition from monopoly to competition it is vital that we and the states vigilantly and vigorously enforce the rules that we adopt today and that will be adopted in the future to open local markets to competition. If we fail to meet that responsibility, the actions that we take today to accomplish the 1996 Act's pro-competitive, deregulatory objectives may prove to be ineffective.

E. Transition

21. We consider it vitally important to establish a "pro-competitive, deregulatory national policy framework"[14] for local telephony competition, but we are acutely mindful of existing common carrier arrangements, relationships, and expectations, particularly those that affect incumbent LECs. In light of the timing issues described above, we think it wise to provide some appropriate transitions.

22. In this regard, this Order sets minimum, uniform, national rules, but also relies heavily on states to apply these rules and to exercise their own discretion in implementing a pro-competitive regime in their local telephone markets. On those issues where the need to create a factual record distinct to a state or to balance unique local considerations is material, we ask the states to develop their own rules that are consistent with general guidance contained herein. The states will do so in rulemakings and in arbitrating interconnection arrangements. On other issues, particularly those related to pricing, we facilitate the ability of states to adopt immediate, temporary decisions by permitting the states to set proxy prices within a defined range or subject to a ceiling. We believe that some states will find these alternatives useful in light of the strict deadlines of the law. For example, section 252(b)(4)(C) requires a state commission to complete the arbitration of issues that have been referred to it, pursuant to section 252(b)(1), within nine months after the incumbent local exchange carrier received the request for negotiation. Selection of the actual prices within the range or subject to the ceiling will be for the state commission to determine. Some states may use proxies temporarily because they lack the resources necessary to review cost studies in rulemakings or arbitrations. Other states may lack adequate resources to complete such tasks before the expiration of the arbitration deadline. However, we encourage all states to complete the necessary work within the statutory deadline. Our expectation is that the bulk of interconnection arrangements will be concluded through arbitration or agreement, by the beginning of 1997. Not until then will we be able to determine more precisely the impact of this Order on promoting competition. Between now and then, we are eager to continue our work with the states. In this period, as set forth earlier, we should be able to take major steps

[14] Joint Explanatory Statement at 1.

toward implementing a new universal service system and far-reaching reform of interstate access. These reforms will reflect intensive dialogue between us and the states.

23. Similarly, as states implement the rules that we adopt in this order as well as their own decisions, they may find it useful to consult with us, either formally or informally, regarding particular aspects of these rules. We encourage and invite such inquiries because we believe that such consultations are likely to provide greater certainty to the states as they apply our rules to specific arbitration issues and possibly to reduce the burden of expensive judicial proceedings on states. A variety of formal and informal procedures exist under our rules for such consultations, and we may find it helpful to fashion others as we gain additional experience under the 1996 Act.

F. Executive Summary

1. Scope of Authority of the FCC and State Commissions

24. The Commission concludes that sections 251 and 252 address both interstate and intrastate aspects of interconnection, resale services, and access to unbundled elements. The 1996 Act moves beyond the distinction between interstate and intrastate matters that was established in the 1934 Act, and instead expands the applicability of national rules to historically intrastate issues, and state rules to historically interstate issues. In the Report and Order, the Commission concludes that the states and the FCC can craft a partnership that is built on mutual commitment to local telephone competition throughout the country, and that under this partnership, the FCC establishes uniform national rules for some issues, the states, and in some instances the FCC, administer these rules, and the states adopt additional rules that are critical to promoting local telephone competition. The rules that the FCC establishes in this Report and Order are minimum requirements upon which the states may build. The Commission also intends to review and amend the rules it adopts in this Report and Order to take into account competitive developments, states' experiences, and technological changes.

2. Duty to Negotiate in Good Faith

25. In the Report and Order, the Commission establishes some national rules regarding the duty to negotiate in good faith, but concludes that it would be futile to try to determine in advance every possible action that might be inconsistent with the duty to negotiate in good faith. The Commission also concludes that, in many instances, whether a party has negotiated in good faith will need to be decided on a case-by-case basis, in light of the particular circumstances. The Commission notes that the arbitration process set forth in section 252 provides one remedy for failing to negotiate in good faith. The Commission also concludes that agreements that were negotiated before the 1996 Act was enacted, including agreements between neighboring LECs, must be filed for review by the state commission pursuant to section 252(a). If the state commission approves such agreements, the terms of

those agreements must be made available to requesting telecommunications carriers in accordance with section 252(i).

3. Interconnection

26. Section 251(c)(2) requires incumbent LECs to provide interconnection to any requesting telecommunications carrier at any technically feasible point. The interconnection must be at least equal in quality to that provided by the incumbent LEC to itself or its affiliates, and must be provided on rates, terms, and conditions that are just, reasonable, and nondiscriminatory. The Commission concludes that the term "interconnection" under section 251(c)(2) refers only to the physical linking of two networks for the mutual exchange of traffic. The Commission identifies a minimum set of five "technically feasible" points at which incumbent LECs must provide interconnection: (1) the line side of a local switch (for example, at the main distribution frame); (2) the trunk side of a local switch; (3) the trunk interconnection points for a tandem switch; (4) central office cross-connect points; and (5) out-of-band signalling facilities, such as signalling transfer points, necessary to exchange traffic and access call-related databases. In addition, the points of access to unbundled elements (discussed below) are also technically feasible points of interconnection. The Commission finds that telecommunications carriers may request interconnection under section 251(c)(2) to provide telephone exchange or exchange access service, or both. If the request is for such purpose, the incumbent LEC must provide interconnection in accordance with section 251(c)(2) and the Commission's rules thereunder to any telecommunications carrier, including interexchange carriers and commercial mobile radio service (CMRS) providers.

4. Access to Unbundled Elements

27. Section 251(c)(3) requires incumbent LECs to provide requesting telecommunications carriers nondiscriminatory access to network elements on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just, reasonable, and nondiscriminatory. In the Report and Order, the Commission identifies a minimum set of network elements that incumbent LECs must provide under this section. States may require incumbent LECs to provide additional network elements on an unbundled basis. The minimum set of network elements the Commission identifies are: local loops, local and tandem switches (including all vertical switching features provided by such switches), interoffice transmission facilities, network interface devices, signalling and call-related database facilities, operations support systems functions, and operator and directory assistance facilities. The Commission concludes that incumbent LECs must provide nondiscriminatory access to operations support systems functions by January 1, 1997. The Commission concludes that access to such operations support systems is critical to affording new entrants a meaningful opportunity to compete with incumbent LECs. The Commission also concludes that incumbent LECs are required to provide access to network elements in a manner that allows requesting carriers to combine such elements as they choose, and that incumbent LECs

may not impose restrictions upon the uses to which requesting carriers put such network elements.

5. Methods of Obtaining Interconnection and Access to Unbundled Elements

28. Section 251(c)(6) requires incumbent LECs to provide physical collocation of equipment necessary for interconnection or access to unbundled network elements at the incumbent LEC's premises, except that the incumbent LEC may provide virtual collocation if it demonstrates to the state commission that physical collocation is not practical for technical reasons or because of space limitations. The Commission concludes that incumbent LECs are required to provide for any technically feasible method of interconnection or access requested by a telecommunications carrier, including physical collocation, virtual collocation, and interconnection at meet points. The Commission adopts, with certain modifications, some of the physical and virtual collocation requirements it adopted earlier in the *Expanded Interconnection* proceeding. The Commission also establishes rules interpreting the requirements of section 251(c)(6).

6. Pricing Methodologies

29. The 1996 Act requires the states to set prices for interconnection and unbundled elements that are cost-based, nondiscriminatory, and may include a reasonable profit. To help the states accomplish this, the Commission concludes that the state commissions should set arbitrated rates for interconnection and access to unbundled elements pursuant a forward-looking economic cost pricing methodology. The Commission concludes that the prices that new entrants pay for interconnection and unbundled elements should be based on the local telephone companies Total Service Long Run Incremental Cost of a particular network element, which the Commission calls "Total Element Long-Run Incremental Cost" (TELRIC), plus a reasonable share of forward-looking joint and common costs. States will determine, among other things, the appropriate risk-adjusted cost of capital and depreciation rates. For states that are unable to conduct a cost study and apply an economic costing methodology within the statutory time frame for arbitrating interconnection disputes, the Commission establishes default ceilings and ranges for the states to apply, on an interim basis, to interconnection arrangements. The Commission establishes a default range of 0.2-0.4 cents per minute for switching. For tandem switching, the Commission establishes a default ceiling of 0.15 cents per minute. The Order also establishes default ceilings for the other unbundled network elements.

7. Access Charges for Unbundled Switching

30. Nothing in this Report and Order alters the collection of access charges paid by an interexchange carrier under Part 69 of the Commission's rules, when the incumbent LEC provides exchange access service to an interexchange carrier, either directly or through service

resale. Because access charges are not included in the cost-based prices for unbundled network elements, and because certain portions of access charges currently support the provision of universal service, until the access charge reform and universal service proceedings have been completed, the Commission continues to provide for a certain portion of access charge recovery with respect to use of an incumbent LEC's unbundled switching element, for a defined period of time. This will minimize the possibility that the incumbent LEC will be able to "double recover," through access charges, the facility costs that new entrants have already paid to purchase unbundled elements, while preserving the status quo with respect to subsidy payments. Incumbent LECs will recover from interconnecting carriers the carrier common line charge and a charge equal to 75% of the transport interconnection charge for all interstate minutes traversing the incumbent LECs local switches for which the interconnecting carriers pay unbundled network element charges. This aspect of the Order expires at the earliest of: 1) June 30, 1997; 2) the effective date of final decisions by the Commission in the universal service and access reform proceedings; or 3) if the incumbent LEC is a Bell Operating Company (BOC), the date on which that BOC is authorized under section 271 of the Act to provide in-region interLATA service, for any given state.

31. For a similar limited period, incumbent LECs may charge the same portions of any intrastate access charges comparable to the carrier common line charge (CCLC) and the transport interconnection charge (TIC), as well as any existing explicit universal service support mechanisms based on intrastate access charges. During this period, incumbent LECs may continue to recover such revenues from purchasers of unbundled local switching elements that use those elements to originate or terminate intrastate toll calls for end user customers they win from incumbent LECs. These state mechanisms must end on the earlier of: (1) June 30, 1997; (2) the effective date of a state commission decision that an incumbent LEC may not assess such charges; and (3) if the incumbent LEC that receives the access charge revenues is a BOC, the date on which that BOC is authorized under section 271 of the 1996 Act to offer in-region interLATA service. The last end date will apply only to the recovery of charges in those states in which the BOC is authorized to offer interLATA service.

8. Resale

32. The 1996 Act requires all incumbent LECs to offer for resale any telecommunications service that the carrier provides at retail to subscribers who are not telecommunications carriers. Resale will be an important entry strategy both in the short term for many new entrants as they build out their own facilities and for small businesses that cannot afford to compete in the local exchange market by purchasing unbundled elements or by building their own networks. State commissions must identify marketing, billing, collection, and other costs that will be avoided or that are avoidable by incumbent LECs when they provide services wholesale, and calculate the portion of the retail rates for those services that is attributable to the avoided and avoidable costs. The Commission identifies certain avoided costs, and the application of this definition is left to the states. If a state elects not to

implement the methodology, it may elect, on an interim basis, a discount rate from within a default range of discount rates established by the Commission. The Commission establishes a default discount range of 17-25% off retail prices, leaving the states to set the specific rate within that range, in the exercise of their discretion.

9. Requesting Telecommunications Carriers

33. The Commission concludes that, to the extent that a carrier is engaged in providing for a fee local, interexchange, or international basic services directly to the public or to such classes of users as to be effectively available directly to the public, the carrier is a "telecommunications carrier," and is thus subject to the requirements of section 251(a) and the benefits of section 251(c). The Commission concludes that CMRS providers are telecommunications carriers, and that private mobile radio service (PMRS) providers generally are not telecommunications carriers, except to the extent that a PMRS provider uses excess capacity to provide local, interexchange, or international services for a fee directly to the public. The Commission also concludes that, if a company provides both telecommunications services and information services, it must be classified as a telecommunications carrier.

10. Commercial Mobile Radio Service

34. The Commission concludes that LECs are obligated, pursuant to section 251(b)(5) and the corresponding pricing standards of section 252(d)(2) to to enter into reciprocal compensation arrangements with CMRS providers, including paging providers, for the transport and termination of traffic on each other's networks. The Commission concludes that many CMRS providers (specifically cellular, broadband PCS and covered specialized mobile radio (SMR) providers) offer telephone exchange service and exchange access, and that incumbent LECs therefore must make interconnection available to these CMRS providers in conformity with sections 251(c) and 252. The Commission concludes that CMRS providers should not be classified as LECs at this time. The Commission also concludes that it may apply section 251 and 252 to LEC-CMRS interconnection. By opting to proceed under sections 251 and 252, the Commission is not finding that section 332 jurisdiction over interconnection has been repealed by implication, and the Commission acknowledges that section 332, in tandem with section 201, is a basis for jurisdiction over LEC-CMRS interconnection.

11. Transport and Termination

35. The 1996 Act requires that charges for transport and termination of traffic set based on "additional cost." The Commission concludes that state commissions, during arbitrations, should set symmetrical prices based on the local telephone company's forward-looking economic costs. The state commissions would use the TELRIC methodology when establishing rates for transport and termination. The Commission establishes a default range

of 0.2-0.4 cents per minute for end office termination for states which have not conducted a TELRIC cost study. The Commission finds significant evidence in the record in support of the lower end of the range. In addition, the Commission finds that additional reciprocal charges could apply to termination through a tandem switch. The default ceiling for tandem switching is 0.15 cents per minute, plus applicable charges for transport from the tandem switch to the end office. Each state opting for the default approach for a limited period of time, may select a rate within that range.

12. Access to Rights of Way

36. The Commission amends its rules to implement the pole attachment provisions of the 1996 Act. Specifically, the Commission establishes procedures for nondiscriminatory access by cable television systems and telecommunications carriers to poles, ducts, conduits, and rights-of-way owned by utilities or LECs. The Order includes several specific rules as well as a number of more general guidelines designed to facilitate the negotiation and mutual performance of fair, pro-competitive access agreements without the need for regulatory intervention. Additionally, an expedited dispute resolution is provided when good faith negotiations fail, as are requirements concerning modifications to poles, ducts, conduits, and rights-of-way and the allocation of the costs of such modifications.

13. Obligations Imposed on non-incumbent LECs

37. The Commission concludes that states generally may not impose on non-incumbent LECs the obligations set forth in section 251(c) entitled, "Additional Obligations on Incumbent Local Exchange Carriers." Section 251(h)(2) sets forth a process by which the Commission may decide to treat LECs as incumbent LECs, and state commissions or other interested parties may ask the Commission to issue a rule, in accordance with section 251(h)(2), providing for the treatment of a LEC as an incumbent LEC. In addition to this Report and Order, the Commission addresses in separate proceedings some of the obligations, such as dialing parity and number portability, that section 251(b) imposes on all LECs.

14. Exemptions, Suspensions, and Modifications of Section 251 Requirements

38. Section 251(f)(1) provides for exemption from the requirements in section 251(c) for rural telephone companies (as defined by the 1996 Act) under certain circumstances. Section 251(f)(2) permits LECs with fewer than 2 percent of the nation's subscriber lines to petition for suspension or modification of the requirements in sections 251(b) or (c). In the Report and Order, the Commission establishes a very limited set of rules interpreting the requirements of section 251(f). For example, the Commission finds that LECs bear the burden of proving to the state commission that a suspension or modification of the requirements of section 251(b) or (c) is justified. Rural LECs bear the burden of proving that continued exemption of the requirements of section 251(c) is justified, once a bona fide

request has been made by a carrier under section 251. The Commission also concludes that only LECs that, at the holding company level, have fewer than 2 percent of the nation's subscriber lines are entitled to petition for suspension or modification of requirements under section 251(f)(2). For the most part, however, the states will interpret the provisions of section 251(f) through rulemaking and adjudicative proceedings, and will be responsible for determining whether a LEC in a particular instance is entitled to exemption, suspension, or modification of section 251 requirements.

15. Commission Responsibilities Under Section 252

39. Section 252(e)(5) requires the Commission to assume the state's responsibilities under section 252 if the state "fails to act to carry out its responsibility" under that section. In the Report and Order, the Commission adopts a minimum set of rules that will provide notice of the standards and procedures that the Commission will use if it has to assume the responsibility of a state commission under section 252(e)(5). The Commission concludes that, if it arbitrates agreements, it will use a "final offer" arbitration method, under which each party to the arbitration proposes its best and final offer, and the arbitrator chooses among the proposals. The arbitrator could choose a proposal in its entirety, or could choose different parties' proposals on an issue-by-issue basis. In addition, the parties could continue to negotiate an agreement after they submit their proposals and before the arbitrator makes a decision.

40. Section 252(i) of the 1996 Act requires that incumbent LECs make available to any requesting telecommunications carrier any individual interconnection, service, or network element on the same terms and conditions as contained in any agreement approved under Section 252 to which they are a party. The Commission concludes that section 252(i) entitles all carriers with interconnection agreements to "most favored nation" status regardless of whether such a clause is in their agreement. Carriers may obtain any individual interconnection, service, or network element under the same terms and conditions as contained in any publicly filed interconnection agreement without having to agree to the entire agreement. Additionally, carriers seeking interconnection, network elements, or services pursuant to section 252(i) need not make such requests pursuant to the procedures for initial section 251 requests, but instead may obtain access to agreement provisions on an expedited basis.

II. SCOPE OF THE COMMISSION'S RULES

41. In implementing section 251, we conclude that some national rules are necessary to promote Congress's goals for a national policy framework and serve the public interest, and that states should have the major responsibility for prescribing the specific terms and conditions that will lead to competition in local exchange markets. Our approach in this Report and Order has been a pragmatic one, consistent with the Act, with respect to this allocation of responsibilities. We believe that the steps necessary to implement section 251 are not appropriately characterized as a choice between specific national rules on the one hand and substantial state discretion on the other. We adopt national rules where they facilitate administration of sections 251 and 252, expedite negotiations and arbitrations by narrowing the potential range of dispute where appropriate to do so, offer uniform interpretations of the law that might not otherwise emerge until after years of litigation, remedy significant imbalances in bargaining power, and establish the minimum requirements necessary to implement the nationwide competition that Congress sought to establish. This is consistent with our obligation to "complete all actions necessary to establish regulations to implement the requirements" of section 251.[15] Some of these rules will be relatively self-executing. In many instances, however, the rules we establish call on the states to exercise significant discretion and to make critical decisions through arbitrations and development of state-specific rules. Over time, we will continue to review the allocation of responsibilities, and we will reallocate them if it appears that we have inappropriately or inefficiently designated the decision making roles.

42. The decisions in this Report and Order, and in this Section in particular, benefit from valuable insights provided by states based on their experiences in establishing rules and taking other actions intended to foster local competition. Through formal comments, *ex parte* meetings, and open forums,[16] state commissioners and their staffs provided extensive, detailed information to us regarding difficult or complex issues that they have encountered, and the various approaches they have adopted to address those issues. Information from the states highlighted both differences among communities within states, as well as similarities among states. Recent state rules and orders that take into account the local competition provisions of the 1996 Act have been particularly helpful to our deliberations about the types of national

[15] 47 U.S.C. § 251(d)(1).

[16] Public forum held on March 15, 1996, by FCC's Office of General Counsel to discuss interpretation of sections 251 and 252 of the Telecommunications Act of 1996; public forum held on July 9, 1996, by FCC's Common Carrier Bureau and Office of General Counsel to discuss implementation of section 271 of the Telecommunications Act of 1996.

rules that will best further the statute's goal of encouraging local telephone competition.[17] These state decisions also offered useful insights in determining the extent to which the Commission should set forth uniform national rules, and the extent to which we should ensure that states can impose varying requirements. Our contact with state commissioners and their staffs, as well as recent state actions, make clear that states and the FCC share a common commitment to creating opportunities for efficient new entry into the local telephone market. Our experience in working with state commissions since passage of the 1996 Act confirms that we will achieve that goal most effectively and quickly by working cooperatively with one another now and in the future as the country's emerging competition policy presents new difficulties and opportunities.

43. We also received helpful advice and assistance from other government agencies, including the National Telecommunications and Information Administration (NTIA), the Department of Justice, and the Department of Defense about how national rules could further the public interest. In addition, comments from industry members and consumer advocacy groups helped us understand better the varying and competing concerns of consumers and different representatives of the telecommunications industry. We benefitted as well by discovering that there are certain matters on which there is substantial agreement about the role the Commission should play in establishing and enforcing provisions of section 251.

A. Advantages and Disadvantages of National Rules

1. Background

44. Section 251(d)(1) instructs the Commission, within six months after the enactment of the 1996 Act (that is, by August 8, 1996), to "establish regulations to implement the requirements of [section 251]."[18] In addition, section 253 requires the Commission to preempt the enforcement of any state or local statute, regulation, or legal requirement that "prohibit[s]

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[17] *See, e.g.*, Petition of AT&T for the Commission to Establish Resale Rules, Rates, Terms and Condition and the Initial Unbundling of Services, Docket No. 6352-U (Georgia Commission May 29, 1996); AT&T Communications of Illinois, Inc. *et al.*, Petition for a Total Local Exchange Wholesale Service Tariff from Illinois Bell Telephone Company, Nos. 95-0458 and 95-0531 (consol.) (Illinois Commission June 26, 1996); Hawaii Administrative Rules, Ch. 6-80, "Competition in Telecommunications Services," (Hawaii Commission May 17, 1996); Public Utilities Commission of Ohio Case No. 95-845-TP-COI (Local Competition) (Ohio Commission June 12, 1996) and Implementation of the Mediation and Arbitration Provisions of the Federal Telecommunications Act of 1996, Case No. 96-463-TP-UNC (Ohio Commission May 30, 1996); Proposed Rules regarding Implementation of §§ 40-15-101 *et seq.* Requirements relating to Interconnection and Unbundling, Docket No. 95R-556T (Colorado Commission April 25, 1996) (one of a series of Orders adopted by the Colorado Commission in response to the local competition provisions of the 1996 Act); Washington Utilities and Transportation Commission, Fifteenth Supplemental Order, Decision and Order Rejecting Tariff Revisions, Requiring Refiling, Docket No. UT-950200 (Washington Commission April 1996).

[18] 47 U.S.C. § 251(d)(1). The Commission's implementing rules should be designed "to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition." Joint Explanatory Statement at 1.

or [has] the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service."[19]

45. In the NPRM, we stated our belief that we should implement Congress's goal of a pro-competitive, de-regulatory, national policy framework by adopting national rules that are designed to secure the full benefits of competition for consumers, with due regard to work already done by the states.[20] We sought comment on the extent to which we should adopt explicit national rules, and the extent to which permitting variations among states would further Congress's pro-competitive goals.[21] We anticipated that we would rely on actions some states have already taken to address interconnection and other issues related to opening local markets to competition. In the NPRM, we set forth some of the benefits that would likely result from implementing explicit national rules, and some of the benefits that would likely result from allowing variations among states.[22]

2. Comments

46. The parties recommend a broad spectrum of approaches with respect to the scope and detail of Commission regulations. The vast majority of potential local competitors, such as interexchange carriers (IXCs), competitive access providers (CAPs), and cable operators, assert that the Commission should adopt clear and explicit national standards that will serve as the backdrop for negotiations and will establish minimum requirements for arbitrated agreements.[23] Other parties, including federal agencies, consumer groups, and equipment manufacturers, also support explicit national rules.[24] These parties contend that explicit national standards are useful, or even critical, to achieving the pro-competitive goals enunciated by Congress.

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[19] 47 U.S.C. § 253(a) and (d).

[20] NPRM at para. 26 (*citing* Joint Explanatory Statement at 1).

[21] NPRM at paras. 27, 35.

[22] NPRM at paras. 30-33.

[23] *See, e.g.*, AT&T comments at 3; MCI comments at 4-6; Sprint comments at 4-6; MFS comments at 5-6; Jones Intercable comments at 11, 13; Cable & Wireless comments at 6-7; LCI comments at 2, 13; TCC comments at 5-6; Hyperion comments at 6; Ad Hoc Telecommunications Users Committee comments at 3-10; LDDS reply at 4.

[24] *See, e.g.*, SBA comments at 4; Ohio Consumers' Counsel comments at 2-3; DoJ comments at 5-8; Lucent comments at 3; Frontier reply at 7; IDCMA reply at 2-9; NTIA reply at 3; National Association of the Deaf reply at 1-3; Texas Public Utility Counsel reply at 2.

47. Parties supporting explicit national rules assert that national standards will give incumbent LECs an incentive to negotiate if the national rules would subject the incumbents to less advantageous terms than they otherwise would be likely to negotiate.[25] Other advantages of national standards, according to these parties, include: reducing the likelihood of potentially inconsistent determinations by state commissions and courts,[26] and reducing burdens on new entrants that seek to provide service on a regional or national basis by limiting their need for separate network configurations and marketing strategies, and by increasing predictability.[27] As a result, they assert, new entrants would have greater access to capital necessary to develop competing services.[28] Parties state that collectively, these advantages demonstrate that national standards will foster competition more quickly than regulations developed on a state-by-state basis.[29] In addition, some parties contend that clear national standards also will assist both the states in arbitrating and reviewing agreements within the time frames set forth in section 252 and the FCC in arbitrating agreements under section 252(e)(5) where states have failed to act, and in reviewing BOC applications to enter

[25] *See, e.g.*, AT&T comments at 6-8 (noting that this is particularly true for non-BOC incumbent LECs, such as SNET and GTE, which already have interLATA authority and have no reason to comply with section 251); Cable & Wireless comments at 7-9; Hyperion comments at 7; MFS comments at 5-6; Teleport comments at 14-17 (vague standards will allow incumbents to adopt a "take it or leave it" approach); TCC comments at 5-7; Comcast reply at 5; CompTel reply at 7; LDDS reply at 3-4; NTIA reply at 3; PageNet reply at 4; *see also* Citizens Utilities comments at 5 (FCC should establish minimum standards sufficient to equalize bargaining power between incumbents and new entrants); Cox comments at 10; Excel comments at 2-3. *But see, e.g.*, Ameritech comments at 7-9 (incumbent LECs do not have vastly superior bargaining power, and cannot unilaterally impose terms upon other parties); PacTel comments at 6; USTA comments at 6 n.9 (the NPRM overstates the bargaining power of incumbent LECs; in particular, non-BOC LECs may have less bargaining power than IXCs, cable companies, or competitive access providers); USTA reply at 2-4; Bell Atlantic reply at 3.

[26] ALTS comments at 2-4; ACSI comments at 4; AT&T comments at 9-10; Cox comments at 22-23; DoJ comments at 12; Frontier comments at 6; GSA/DoD comments at 4-5; TIA comments at 5; MCI comments at 4-6 (differing rules will make it difficult to develop a rational national policy); TCC comments at 7-8, 13 (federal rules will eliminate the need for new entrants to expend resources fighting the same battle in 50 states); *accord* Cable & Wireless comments at 10 (even 50 excellent plans are not optimal if they are 50 different plans).

[27] AT&T comments at 9; Cable & Wireless comments at 6-9 (cost efficiencies of national networks are substantial); Excel comments at 2; Hyperion comments at 5; GST comments at 2; Jones Intercable comments at 11; Ohio Consumers' Counsel comments at 3; SBA comments at 4 (national rules will particularly help small competitors); Sprint comments at 3; TCC comments at 7-8; ACSI reply at 4; *see also* Intermedia comments at 3 (national uniform standards are necessary to resolve the many regulatory, technical and operational questions that accompany interconnection to incumbent LEC networks); Lucent comments at 3 (national standards will promote industry growth and assist telecommunications equipment vendors); SDN Users Association comments at 2; International Communications Ass'n comments at 3.

[28] ALTS comments at 2-4; GSA/DoD comments at 4-5; MCI comments at 4-6. *But see* GTE reply at 6 (uniform federal rules will not affect the ability of large, financially well-positioned entities like AT&T to obtain capital).

[29] *See, e.g.*, ALTS comments at 2-4; Competition Policy Institute comments at 10; DoJ comments at 13-15 (a single set of rules can be created faster than 50 different sets).

in-region interLATA markets pursuant to section 271.[30] Some parties that favor strong national rules caution against prematurely dismantling consumer protection rules and relying instead on competitive market conditions that do not yet exist.[31] Many commercial mobile radio service (CMRS) providers contend that national rules governing LEC-CMRS interconnection are necessary to foster development of a ubiquitous, nationwide network.[32]

48. Some state regulatory commissions advocate explicit national standards, at least in some areas. For example, the Massachusetts Commission states that the FCC can and should establish national rules in implementing section 251, except in the area of pricing.[33] The Kentucky Commission asserts that uniform national rules for market entry are necessary to ensure successful local competition, and that national pricing principles will aid states in setting rates during the arbitration process and in reviewing BOC statements of generally available terms.[34] The North Dakota Commission asserts that, while some states may not need federal support, specific standards would provide a necessary and significant benefit for North Dakota, in light of its limited resources to implement a pro-competitive regulatory regime.[35] The Illinois Commission states that minimum national rules are a major step toward competitive markets, but that states should be permitted to implement and enforce additional rules.[36]

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[30] Ad Hoc Telecommunications Users Committee comments at 9-10; AT&T comments at 8-9, 11; Cable & Wireless comments at 7-9; CompTel comments at 22; Excel comments at 2.

[31] *See, e.g.*, Competition Policy Institute reply at 2, 11.

[32] *See, e.g.*, Vanguard comments in CC Docket No. 95-185 at 26; Centennial comments in CC Docket No. 95-185 at 31.

[33] Mass. Commission comments at 4-5. What, if any, rules the Commission should, as both a legal and policy matter, adopt with respect to pricing is addressed separately in *infra*, Section II.D.

[34] Kentucky Commission comments at 3-4. Section 252(f) permits a BOC to file for review by a state commission a statement of terms and conditions that the BOC offers to comply with the regulations of section 251 and the regulations thereunder. A BOC may be permitted to provide in-region interLATA service if, ten months after enactment of the 1996 Act, no carrier has requested access and interconnection (as described in section 271(c)(1)(A)) and the BOC has a statement of generally available terms and conditions that a state commission has approved or permitted to take effect. *See also* Kansas Commission comments at 4-5 (national interconnection standards to enable inter-company provisioning and national performance standards will facilitate negotiations and reduce the incumbent's negotiating advantage).

[35] North Dakota Commission comments at 1-2; *see also* Illinois Commission comments at 9-10 (minimum federal standards will give direction to states, will help create consistency among states, and will serve as a major step in the transition toward a competitive market, but states should be able to augment and build upon national standards).

[36] Illinois Commission comments at 9-10.

49. Some parties contend that national rules are particularly important for small competitors' entry into local markets.[37] Barriers to market entry, which cause delay, raise transactional costs, or otherwise impose economically inefficient constraints, are particularly threatening to small competitors, according to the Small Business Administration. Moreover, the Small Business Administration contends that the needs of small competitors deserve special consideration, because they are likely to fill niche market needs that larger competitors typically overlook.[38]

50. Other commenters oppose explicit national rules, or seek significant limits on the scope and detail of FCC requirements. The majority of state commissions and incumbent LECs advocate that the Commission establish general, broad regulations or guidelines, and leave substantial opportunity for the parties to negotiate specific terms,[39] with the states to establish specific requirements if the parties cannot reach agreement.[40] BellSouth urges the Commission merely to codify the language of the 1996 Act.[41]

51. Parties that oppose explicit national standards assert that they are contrary to the Act,[42] could impede the development of local competition,[43] and will undermine progressive

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[37] *See, e.g.*, SBA comments at 3-4.

[38] *Id; accord, e.g.*, Richard N. Koch comments at 1-2; ATSI reply at 7-8. *Contra, e.g.*, Colorado Ind. Tel. Ass'n comments at 2-3; GVNW comments at 2; NARUC comments at 2; Joint Consumer Advocates reply at 5-6 (national standards will be particularly burdensome for small or rural LECs, and will make it difficult for "niche" providers to succeed); Rural Tel. Coalition comments at 4-8.

[39] Ameritech comments at 6; Bell Atlantic comments at 2-3; Georgia Commission comments at 3-5; Illinois Commission comments at 13; Lincoln Tel. comments at 3-4; Rural Tel. Coalition comments at 2; South Carolina Commission comments at 2-3; SBC comments at 4-5, 19-21; TDS comments at 3 (Congress evinced a preference for voluntarily negotiated agreements and the FCC should not try to alter the Act's mechanisms for transitioning to competition); USTA comments at 6; Ohio Consumers' Counsel reply at 3.

[40] *See, e.g.*, USTA comments at 6-8; Alabama Commission comments at 10; Ameritech comments at 4, 6; Bell Atlantic comments at 1-2; Iowa Commission comments at 2, 4; NARUC comments at 4, 22-24; Idaho Commission comments at 2-4; North Carolina Commission Staff comments at 10-11; Oklahoma Commission comments at 1-3; Puerto Rico Tel. comments at 3-4; *accord* Alliance for Public Technology comments at 8-10; CFA/CU comments at 4-5; Rural Tel. Coalition comments at 2, 6; TDS comments at 3; Texas Commission comments at 4-5.

[41] BellSouth comments at 3-5.

[42] Alaska Tel. Ass'n comments at 2; Ameritech comments at 9; Bell Atlantic comments at 2-3; GTE comments at 12-14; Puerto Rico Tel. comments at 2-3; Rural Tel. Coalition comments at 2, 6; SBC comments at 8-10, 18-19.

actions already taken by states.[44] They also assert that states should be given the opportunity to experiment with different approaches intended to promote local competition,[45] and that technical, economic, geographic, and demographic variations require tailored responses by state commissions.[46] For example, GTE states that, "[i]n reality, each local market is different -- some are flat, others are hilly or mountainous; some are densely populated, others are suburban or rural; some have state-of-the-art technology, others retain older facilities; some possess a temperate climate, others suffer harsh storms; some are wealthy, others are poor; some have a high proportion of business customers, others are predominantly residential."[47] Many parties counter that geographic differences do not merit state-specific rules instead of national rules.[48] They contend that the differences cited by GTE exist among different locales, but that many states include most of these variations within their borders.[49]

52. State commissions and incumbent LECs reject the suggestion that the FCC is required to impose nationally uniform requirements in order to achieve Congress's goals. For example, in support of its claim that Congress did not intend national uniformity, the New

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[43] Ad Hoc Coalition of Corporate Telecommunications Managers comments at 2; BellSouth comments at 3-5; District of Columbia Commission comments at 11-12; Georgia Commission comments at 2; Maryland Commission comments at 2-3; Oregon Commission comments at 7, 25; PacTel comments at 1-3; California Commission reply at 8; *see also* Illinois Commission comments at 9-10 (overly extensive federal regulation could inhibit competition by restricting a state's ability to respond to technological and market developments and regional differences).

[44] Connecticut Commission comments at 8-9; GTE comments at 10; Maryland Commission comments at 5-6, 12; MECA comments at 11-12; Municipal Utilities comments at 6-8; North Carolina Commission Staff comments at 9-10; Oregon Commission comments at iv, 7; PacTel comments at 1-3; Washington Commission comments at 1-2.

[45] *See, e.g.*, Alliance for Public Technology comments at 8-10; Florida Commission comments at 2-3, 6; New York Commission comments at 18-19; Pennsylvania Commission comments at 17; TDS comments at 11.

[46] *See, e.g.*, District of Columbia Commission comments at 7; North Carolina Commission comments at 2-8; Wyoming Commission comments at 4-5 (Wyoming is rural and sparsely populated, and has among the highest costs in the country, but residents in both cities and rural areas require access to sophisticated services; it cannot "afford to be subjected needlessly to the problems which models designed to address other people's problems would cause").

[47] GTE comments at 7-8.

[48] ALTS comments at 4 (aside from universal service issues that are being addressed by a Joint Board in a separate proceeding, there are no unique policy concerns that states need to address or that would be endangered by national rules); Cable & Wireless comments at 9; DoJ comments at 13-15; GCI comments at 4; MCI comments at 4-6 (networks are not designed on a state-specific basis); Jones Intercable comments at 12; Cox reply at 4 n.8.

[49] *See, e.g.*, AT&T comments at 12.

York Commission cites the fact that agreements may be negotiated without reference to the Commission's regulations under section 251(b) and (c), and that under section 251(d)(3), states may impose rules consistent with the Act.[50]

3. Discussion

53. Comments and *ex parte* discussions with state commission representatives have convinced us that we share with states a common goal of promoting competition in local exchange markets. We conclude that states and the FCC can craft a working relationship that is built on mutual commitment to local service competition throughout the country, in which the FCC establishes uniform, national rules for some issues, the states and the FCC administer these rules, and the states adopt other critically important rules to promote competition. In implementing the national rules we adopt in this Report and Order, states will help to illuminate and develop innovative solutions regarding many complex issues for which we have not attempted to prescribe national rules at this time, and states will adopt specific rules that take into account local concerns. In this Report and Order, and in subsequent actions we intend to take, we have and will continue to seek guidance from various states that have taken the lead in establishing pro-competitive requirements.[51] Virtually every decision in this Report and Order borrows from decisions reached at the state level, and we expect this close association with and reliance on the states to continue in the future. We therefore encourage states to continue to pursue their own pro-competitive policies. Indeed, we hope and expect that this Report and Order will foster an interactive process by which a number of policies consistent with the 1996 Act are generated by states.

54. We find that certain national rules are consistent with the terms and the goals of the statute. Section 251 sets forth a number of rights with respect to interconnection, resale services, and unbundled network elements. We conclude that the Commission should define at least certain minimum obligations that section 251 requires, respectively, of all telecommunications carriers, LECs, or incumbent LECs. For example, as discussed in more detail below, we conclude that it is reasonable to identify a minimum number of network elements that incumbent LECs must unbundle and make available to requesting carriers pursuant to the standards set forth in sections 251(c) and (d), while also permitting states to go beyond that minimum list and impose additional requirements that are consistent with the 1996 Act and the FCC's implementing rules. We find no basis for permitting an incumbent LEC in some states not to make available these minimum technically feasible network elements that are provided by incumbent LECs in other states. We point out, however, that a

[50] New York Commission comments at 12-13; *see also* Maryland Commission comments at 9, 13, 20; Washington Commission comments at 7-8 (referencing section 252(e)(3)); Rural Tel. Coalition reply at 6.

[51] We also expect to rely heavily on state input and experience in other FCC proceedings, such as access reform and petitions concerning BOC entry into in-region interLATA markets.

uniform rule does not necessarily mean uniform results. For example, a national pricing methodology takes into account local factors and inputs, and thus may lead to different prices in different states, and different regions within states. In addition, parties that voluntarily negotiate agreements need not comply with the requirements we establish under sections 251(b) and (c), including any pricing rules we adopt.[52] We intend to review on an ongoing basis the rules we adopt herein in light of competitive developments, states' experiences, and technological changes.

55. We find that incumbent LECs have no economic incentive, independent of the incentives set forth in sections 271 and 274 of the 1996 Act, to provide potential competitors with opportunities to interconnect with and make use of the incumbent LEC's network and services. Negotiations between incumbent LECs and new entrants are not analogous to traditional commercial negotiations in which each party owns or controls something the other party desires. Under section 251, monopoly providers are required to make available their facilities and services to requesting carriers that intend to compete directly with the incumbent LEC for its customers and its control of the local market. Therefore, although the 1996 Act requires incumbent LECs, for example, to provide interconnection and access to unbundled elements on rates, terms, and conditions that are just, reasonable, and nondiscriminatory, incumbent LECs have strong incentives to resist such obligations. The inequality of bargaining power between incumbents and new entrants militates in favor of rules that have the effect of equalizing bargaining power in part because many new entrants seek to enter national or regional markets. National (as opposed to state) rules more directly address these competitive circumstances.

56. We emphasize that, under the statute, parties may voluntarily negotiate agreements "without regard to" the rules that we establish under sections 251(b) and (c).[53] However, fair negotiations will be expedited by the promulgation of national rules. Similarly, state arbitration of interconnection agreements now and in the future will be expedited and simplified by a clear statement of terms that must be included in every arbitrated agreement, absent mutual consent to different terms. Such efficiency and predictability should facilitate entry decisions, and in turn enhance opportunities for local exchange competition. In addition, for new entrants seeking to provide service on a national or regional basis, minimum national requirements may reduce the need for designing costly multiple network configurations and marketing strategies, and allow more efficient competition. More efficient competition will, in turn, benefit consumers. Further, national rules will reduce the need for competitors to revisit the same issue in 51 different jurisdictions, thereby reducing administrative burdens and litigation for new entrants and incumbents.

[52] 47 U.S.C. § 252(a)(1).

[53] 47 U.S.C. § 252(a)(1).

57. We also believe that some explicit national standards will be helpful in enabling the Commission and the states to carry out other responsibilities under the 1996 Act. For example, national standards will enable the Commission to address issues swiftly if the Commission is obligated to assume section 252 responsibilities because a state commission has failed to act.[54] In addition, BOCs that seek to offer long distance service in their service areas must satisfy, *inter alia*, a "competitive checklist" set forth in section 271(c)(2)(B). Many of the competitive checklist provisions require compliance with specific provisions of section 251. For example, the checklist requires BOCs to provide "nondiscriminatory access to network elements in accordance with the requirements of sections 251(c)(3) and 252(d)(1)."[55] Some national rules also will help the states, the DOJ, and the FCC carry out their responsibilities under section 271, and assist BOCs in determining what steps must be taken to meet the requirements of section 271(c)(2)(B), the competitive checklist. In addition, national rules that establish the minimum requirements of section 251 will provide states with a consistent standard against which to conduct the fact-intensive process of verifying checklist compliance, the DOJ will have standards against which to evaluate the applications, and we will have standards to apply in adjudicating section 271 petitions in an extremely compressed time frame. Moreover, we believe that establishing minimum requirements that arbitrated agreements must satisfy will assist states in arbitrating and reviewing agreements under section 252, particularly in light of the relatively short time frames for such state action. While some states reject the idea that national rules will help the state commissions to satisfy their obligations under section 252 to mediate, arbitrate, and review agreements, other states have welcomed national rules, at least with respect to certain matters.[56]

58. A broad range of parties urge the Commission to adopt minimum requirements that would permit states to impose additional, pro-competitive requirements that are consistent with the 1996 Act to address local or state-specific circumstances. We agree generally that many of the rules we adopt should establish non-exhaustive requirements, and that states may impose additional pro-competitive requirements that are consistent with the purposes and

[54] *See* 47 U.S.C. § 252(e)(5).

[55] 47 U.S.C. § 271(c)(2)(B)(ii).

[56] For example, the Georgia and Colorado Commissions support national technical standards for interconnection and collocation, although they generally disfavor detailed standards. Georgia Commission comments at 2; Colorado Commission comments at 2-4. The Illinois Commission, which has aggressively sought to open opportunities for local telephone competition, asserts that minimum national rules are important in developing competitive local telephone service, although it urges the Commission to permit states to implement and enforce additional rules that are consistent with the national rules. Illinois Commission comments at 9-10. The North Dakota Commission has expressed a need for specific national guidance to enable the commission to carry out its obligations under the Act. North Dakota Commission comments at 1-2.

terms of the 1996 Act, including our regulations established pursuant to section 251.[57] We also anticipate that the rules we adopt regarding interconnection, services, and access to unbundled elements will evolve to accommodate developments in technology and competitive circumstances, and that we will continue to draw on state experience in applying our rules and in addressing new or additional issues. We recognize that it is vital that we reexamine our rules over time in order to reflect developments in the dynamic telecommunications industry. We cannot anticipate all of the changes that will occur as a result of technological advancements, competitive developments, and practical experience, particularly at the state level. Therefore, ongoing review of our rules is inevitable. Moreover, we conclude that arbitrated agreements must permit parties to incorporate changes to our national rules, or to applicable state rules as such changes may be effective, without abrogating the entire contract. This will ensure that parties, regardless of when they enter into arbitrated agreements, will be able to take advantage of all applicable Commission and state rules as they evolve.

59. Some parties contend that even minimum requirements may impede the ability of state commissions to take varying approaches to address particular circumstances or conditions. We agree with the contention that, although there are different market conditions from one area to another, such distinct areas do not necessarily replicate state boundaries.[58] For example, virtually all states include both more densely-populated areas and sparsely populated rural areas, and all include both business and residential areas. Although each state is unique in many respects, demographic and other differences among states do not suggest that national rules are inappropriate. Moreover, even though it may not be appropriate to impose identical requirements on carriers with different network technologies, our rules are intended to accommodate such differences.[59] Some parties have argued that explicit national standards will delay the emergence of local telephone competition, but none has offered persuasive evidence to substantiate that claim, and new entrants overwhelmingly favor strong national rules. We conclude, for the reasons set forth above, that some national rules will enhance opportunities for local competition, and we have chosen to adopt national rules where necessary to establish the minimum requirements for a nationwide pro-competitive policy framework.

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[57] In contrast, we conclude that the 1996 Act limits the obligations states may impose on non-incumbent carriers. *See infra*, Section XI.C.

[58] AT&T comments at 12.

[59] *See infra*, Section IV.E. (concluding that successful interconnection or access to an unbundled element at a particular point in the network creates a rebuttable presumption that such interconnection or access is technically feasible at networks that employ *substantially similar facilities*). We agree with parties, such as the Ohio Consumers' Counsel, that physical networks are not designed on a state-by-state basis. Ohio Consumers' Counsel comments at 4.

60. We disagree with those parties that claim we are trying to impose a uniformity that Congress did not intend. Variations among interconnection agreements will exist, because parties may negotiate their own terms, states may impose additional requirements that differ from state to state, and some terms are beyond the scope of this Report and Order. We conclude, however, that establishing certain rights that are available, through arbitration, to all requesting carriers, will help advise parties of their minimum rights and obligations, and will help speed the negotiation process. In effect, the Commission's rules will provide a national baseline for terms and conditions for all arbitrated agreements. Our rules also may tend to serve as a useful guide for negotiations by setting forth minimum requirements that will apply to parties if they are unable to reach agreement. This is consistent with the broad delegation of authority that Congress gave the Commission to implement the requirements set forth in section 251.

61. We also believe that national rules will assist smaller carriers that seek to provide competitive local service. As noted above, national rules will greatly reduce the need for small carriers to expend their limited resources securing their right to interconnection, services, and network elements to which they are entitled under the 1996 Act. This is particularly true with respect to discrete geographic markets that include areas in more than one state.[60] We agree with the Small Business Administration that national rules will reduce delay and lower transaction costs, which impose particular hardships for small entities that are likely to have less of a financial cushion than larger entities.[61] In addition, even a small provider may wish to enter more than one market, and national rules will create economies of scale for entry into multiple markets. We reject the position advocated by some parties that we should not adopt national rules because such rules will be particularly burdensome for small or rural incumbent LECs.[62] We note, however, that section 251(f) provides relief from some of our rules.

62. We recognize the concern of many state commissions that the Commission not undermine or reverse existing state efforts to foster local competition. We believe that Congress did not intend for us needlessly to disrupt the pro-competitive actions some states already have taken that are both consistent with the 1996 Act and our rules implementing section 251.[63] We believe our rules will in many cases be consistent with pro-competitive

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[60] Approximately 17 Personal Communications Service (PCS) providers have Basic Service Areas/Metropolitan Statistical Areas, for example, that cross state lines.

[61] SBA comments at 3-4.

[62] *See, e.g.*, Joint Consumer Advocates reply at 5-6.

[63] 47 U.S.C. § 251(d)(3).

actions already taken by states, and in fact, many of the rules we adopt are based directly on existing state commission actions. We also intend to continue to reflect states' experiences as we revise our rules. We also recognize, however, that in at least some instances existing state requirements will not be consistent with the statute and our implementing rules.[64] It will be necessary in those instances for the subject states to amend their rules and alter their decisions to conform to our rules. In our judgment, national rules are highly desirable to achieve Congress's goal of a pro-competitive national policy framework for the telecommunications industry.

B. Suggested Approaches for FCC Rules

1. Comments

63. Parties propose a variety of approaches that the Commission could take in establishing rules for interconnection, network unbundling, and other issues addressed in section 251.[65] Many parties suggest that the Commission can, and should, establish regulations within six months of the date of enactment of the 1996 Act, and continue on an ongoing basis to revise and amend rules regarding interconnection, service, and access to unbundled network elements.[66] Parties have differing views about why Congress imposed relatively short time frames for action by states and the FCC.[67] Some parties suggest that the Commission take a largely "hands off" approach initially, but that it set more specific rules if and when such rules are needed.[68] IXCs, state commissions, incumbent LECs and others

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[64] *See infra*, Section II.C.

[65] *See, e.g.*, Cox comments at 22-23; Illinois Commission comments at 9-10; MCI comments at 12; MFS comments at 5-6; SBA comments at 5; Attorneys General reply at 3; California Commission reply at 10-11; Minnesota Ind. Coalition reply at 3-4; National Association of the Deaf reply at 1-3.

[66] MCI reply at 5; Sprint reply at 11.

[67] *See, e.g.*, DoJ comments at 13-15 (the short time frame in which to establish rules evidences Congress's desire to bring about change quickly, which could only occur through a single set of rules, rather than through many iterations); *contra, e.g.*, SBC comments at 10 (the short time frames for seeking arbitration and for state commission review of agreements reflect Congress's desire to bring about change more quickly than the pace that the regulatory process historically has achieved).

[68] Alliance for Public Technology comments at 8-10; U S West comments at 3-4, Illinois Commission comments at 9-10.

agree that, in setting national rules, the Commission should learn from and build upon the experiences of the states.[69]

64. Some state commissions and incumbent LECs recommend that the FCC establish general, broad principles rather than detailed requirements.[70] Several parties favor a "preferred outcomes" approach similar to the one adopted in California.[71] Under that approach, the FCC would establish acceptable or "preferred" outcomes, but parties would have the opportunity to justify deviation from those outcomes.[72] The California Commission argues that we should establish a range of guidelines that are detailed enough to be easy to implement by states that have not yet developed rules for competition, but flexible enough to allow states to continue their pro-competitive efforts without disruption.[73] At least one party, however, asserts that a "preferred outcomes" approach is not sufficient to provide incumbent LECs with an incentive to bargain in good faith.[74]

65. Some state commissions recommend that, if the FCC does establish explicit requirements, states should be allowed to impose different requirements. For example, the Illinois Commission urges the FCC to adopt a process by which states may seek a waiver from the national regulations, upon a showing of need.[75] The Ohio and Florida Commissions recommend that the FCC adopt explicit requirements that states could choose to adopt, but that states would have the option of developing their own requirements.[76] Under the proposal recommended by the Ohio Commission, existing state regulations that are consistent with the

[69] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 11-13; MCI comments at 12; Sprint comments at 6-7.

[70] Citizens Utilities comments at 3; Guam Telephone Authority comments at 5; Lincoln Tel. comments at 1, 3; District of Columbia Commission comments at 11-12.

[71] *See, e.g.*, GTE comments at 12-14; PacTel comments at 1-3; Washington Commission comments at 1-2; ALTS comments at 2-4; Teleport comments at 14-17; Texas Public Utility Counsel reply at 2; Minnesota Ind. Coalition reply at 8.

[72] ALTS comments at 2-4.

[73] California Commission reply at 4-7.

[74] Comcast reply at 5.

[75] Illinois Commission comments at 13; *accord* AT&T comments at 11; ACTA comments at 2-4.

[76] Florida Commission comments at 2-3; Ohio Commission comments at 4-5; *accord* NYNEX reply at 4.

1996 Act would be "grandfathered."[77] In addition, if a state failed to adopt any rules regarding competitive entry into local markets within a specified time, the FCC rules would be binding.[78]

2. Discussion

66. We intend to adopt minimum requirements in this proceeding; states may impose additional pro-competitive requirements that are consistent with the Act and our rules. We decline to adopt a "preferred outcomes" approach, because such an approach would fail to establish explicit national standards for arbitration, and would fail to provide sufficient guidance to the parties' options in negotiations. To the extent that parties advocate "preferred outcomes" from which the parties could deviate in arbitrated agreements, we reject such a proposal, because we conclude that it would not provide the benefits conferred by establishing "default" requirements. To the extent that commenters advocate a regulatory approach that would require parties to justify a negotiated result different from the preferred outcomes, we believe that such an approach would impose greater constraints on voluntarily negotiated agreements than the 1996 Act permits. Under the 1996 Act, parties may freely negotiate any terms without justifing deviation from "preferred outcomes."[79] The only restriction on such negotiated agreements is that they must be deemed by the state commission to be nondiscriminatory and consistent with the public interest, under the standards set forth in section 252(e)(2)(A). In response to the Illinois Commission's suggestion that we adopt a process by which states may seek waivers of our rules, we note that Commission rules already provide for waiver of our rules under certain circumstances.[80] We decline to adopt a special waiver process in this proceeding.

67. We intend our rules to give guidance to the parties regarding their rights and obligations under section 251. The specificity of our rules varies with respect to different issues; in some cases, we identify broad principles and leave to the states the determination of what specific requirements are necessary to satisfy those principles. In other cases, we find that local telephone competition will be better served by establishing specific requirements. In each of the sections below, we discuss the basis for adopting particular national principles or rules.

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[77] Ohio Commission comments at 4-5; *accord* NARUC comments at 6-7.

[78] Ohio Commission comments at 4-5.

[79] 47 U.S.C. § 252(a) (parties may negotiate and enter into a binding agreement without regard to standards set forth in sections 251(b) and (c)).

[80] 47 C.F.R. § 1.3.

68. We also believe that we should periodically review and amend our rules to take into account experiences of carriers and states, technological changes, and market developments. The actions we take here are fully responsive to Congress's mandate that we complete all actions necessary to establish regulations to implement the requirements of section 251 by August 8, 1996.[81] We nevertheless retain authority to refine or augment our rules, or to follow a different course, after developing some practical experience with the rules adopted herein. It is beyond doubt that the Commission has ongoing rulemaking authority. For example, section 4(i) provides that the Commission "may perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with the Act, as may be necessary in the execution of its functions."[82] Section 4(j) provides that the Commission "may conduct its proceedings in such manner as will best conduce to the proper dispatch and to the ends of justice."[83] We agree with Sprint, the Illinois Commission, and other parties that we should address in this rulemaking the most important issues, and continue to refine our rules on an ongoing basis to address additional or unanticipated issues, and especially to learn from the decisions and experiences of the states.[84] We also reject the argument of Margaretville Telephone Company that the 1996 Act constitutes an unconstitutional taking because it seeks to deprive incumbent LECs of their "reasonable, investment-backed expectation to hold competitive advantages over new market entrants."[85]

C. Legal Authority of the Commission to Establish Rules Applicable to Intrastate Aspects of Interconnection, Services, and Unbundled Network Elements

1. Background

69. In the NPRM, we tentatively concluded that Congress intended sections 251 and 252 to apply, and that our rules should apply, to both interstate and intrastate aspects of

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[81] 47 U.S.C. § 251(d)(1).

[82] 47 U.S.C. § 154(i).

[83] 47 U.S.C. § 154(j). Section 11 of the 1996 Act also directs the Commission to review and modify its rules on an ongoing basis. 47 U.S.C. § 161.

[84] Sprint comments at vi, 6-7; Illinois Commission comments at 9-10. Although various parties have encouraged us to address issues that are beyond those identified in the NPRM, we will address only those topics identified in the NPRM, or that are a clear and logical outgrowth from issues specifically identified in the NPRM. *See, e.g.*, Unicom comments at 1-2 (urging the Commission to extend to IXCs the rules it adopts for LECs regarding collocation, interconnection, and unbundling); TCI comments at 15-17 (asking Commission to clarify the extent to which municipalities have control over rights-of-way under section 253).

[85] Margaretville Tel. comments at 1-4.

interconnection, services, and access to network elements.[86] We stated in the NPRM that it would seem to make little sense, in terms of economics or technology, to distinguish between interstate and intrastate components for purposes of sections 251 and 252.[87] We also believed that such a distinction would appear to be inconsistent with Congress's desire to establish a national policy framework for interconnection and other issues critical to achieving local competition. We sought comment on these tentative conclusions.

70. We further tentatively concluded in the NPRM that section 2(b) of the 1934 Act does not require a contrary conclusion.[88] Section 2(b) states that, except as provided in certain enumerated sections not including sections 251 and 252, "nothing in [the 1934] Act shall be construed to apply or to give to the Commission jurisdiction with respect to . . . charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate communication service by wire or radio of any carrier . . . ."[89] We noted in the NPRM that sections 251 and 252 do not alter the jurisdictional division of authority with respect to matters falling outside the scope of these provisions.[90] For example, rates charged to end users for local exchange service have traditionally been subject to state authority, and will continue to be.

2. Comments

71. The parties disagree about the extent to which the FCC has authority to establish regulations pursuant to sections 251 and 252. A majority of commenters that address the issue contend that sections 251 and 252 apply to both interstate and intrastate aspects of interconnection, services, and access to unbundled network elements.[91] Other commenters contend, however, that sections 251 and 252 apply only to intrastate aspects of

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[86] NPRM at para. 37.

[87] NPRM at para. 37.

[88] NPRM at para. 39.

[89] 47 U.S.C. § 152(b).

[90] NPRM at para. 40.

[91] *See, e.g.*, ACTA comments at 4; ALTS comments at 6; ACSI comments at 5; Arch comments at 5; Bell Atlantic comments at 7-8 (section 251 addresses matters of a "predominantly intrastate nature"); BellSouth comments at 8; Cable & Wireless comments at 11; CompTel comments at 15; Florida Commission comments at 7; GCI comments at 4; GSA/DoD comments at 6; GTE comments at 3; Jones Intercable comments at 10; MCI comments at 7-8; Sprint comments at 7; TCI comments at 12; Texas Commission comments at 5; NTIA reply at 6 n.15; NCTA reply at 2-7.

interconnection, services, and access to unbundled network elements.[92] None of the commenters appears to claim that section 251 addresses exclusively interstate matters. As discussed below, many parties, including BOCs and state commissions, contend that the FCC's role under sections 251 and 252 is quite limited.[93]

72. The IXCs and other potential competitors in local exchange markets generally assert that the 1996 Act expressly authorizes, and even obligates, the Commission to establish regulations regarding interstate and intrastate aspects of interconnection, service, and access to unbundled network elements. For example, MCI contends that, "[b]ecause the technical feasibility and cost of providing a particular arrangement do not depend on whether the requesting carrier uses that arrangement to provide interstate or intrastate services," it would make no sense to interpret section 251 to include a jurisdictional distinction between interstate and intrastate aspects of interconnection that does not appear on the face of that provision.[94] Several parties assert that sections 251 and 252 alter traditional jurisdictional boundaries by giving states some authority over interstate matters that they previously did not have, and by giving the FCC some new authority over intrastate matters.[95] Other parties assert that section 251 clearly applies to intrastate aspects of interconnection, services, and access to unbundled elements, and that, as a basic principle of administrative law, to the extent that section 251 addresses intrastate matters, the FCC has authority to adopt implementing regulations.[96]

73. Parties point to other provisions in the 1996 Act to show that the traditional jurisdictional division of authority between states and the FCC does not apply with respect to sections 251 and 252. MCI contends that section 253, by addressing federal preemption of both interstate and intrastate barriers to competition, makes it clear that the jurisdictional division of responsibility is inapplicable.[97] Parties also point to the fact that the Commission must in some circumstances assume the state commission's responsibilities as evidence of a

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[92] NARUC comments at 9-10; New York Commission comments at 10-11; U S West comments at 10-11.

[93] Bell Atlantic comments at 7-8; GTE comments at 3; PacTel comments at 11.

[94] MCI comments at 7, 8 (it is highly unlikely that interconnection arrangements will be used exclusively for jurisdictional-specific traffic).

[95] Illinois Commission comments at 3-5, 15; Sprint comments at 5; CompTel reply at 5; Rural Tel. Coalition reply at 3.

[96] MCI reply at 36-37; Vanguard reply at 4 (*citing Time Warner v. FCC*, 56 F.3d 151, 174-76 (D.C. Cir. 1995) for the proposition that agencies are empowered to interpret their organic statutes, through rules and other mechanisms, to govern the behavior of parties regulated under those statutes).

[97] MCI comments at 7-8; *accord* Sprint comments at 4; CompTel comments at 15; TCI reply at 6.

shift in jurisdictional authority.[98] Jones Intercable asserts that sections 251 and 252 of the 1996 Act make distinctions among classes of entities (telecommunications carriers, LECs, and incumbent LECs), rather than between interstate and intrastate service.[99]

74. AT&T contends that, by requiring the Commission to "complete all actions necessary to establish regulations to implement the requirements of this Section," section 251(d)(1) requires the Commission to establish minimum national standards for interconnection, unbundling, pricing, resale, and related requirements.[100] AT&T states that the 1996 Act was created pursuant to the settled rule that federal agency regulations preempt any inconsistent state policies unless the underlying federal statute otherwise provides.[101] It interprets section 251(d)(3) to mean that any Commission regulation that reasonably implements section 251 bars state enforcement of any inconsistent state regulations, without regard to whether the preemptive provisions of section 253 would also apply. According to AT&T, the only limitation on the Commission's preemptive powers is that it may not preclude the enforcement of state access and interconnection requirements that are consistent with the 1996 Act and the FCC's implementing regulations.[102] AT&T maintains that this interpretation is consistent with the fact that section 252(c)(1) requires state commissions to ensure that nonvoluntary agreements are consistent with the Commission's regulations under section 251(d).[103]

75. AT&T further contends that section 2(b) of the Act does not limit the Commission's authority to promulgate rules under section 251, because section 251 "gives the FCC explicit authority to prescribe and enforce preemptive rules that are necessary to achieve

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[98] *See, e.g.*, ACTA comments at 4; New Jersey Cable Ass'n, *et al.* reply at 18-19; TCI reply at 6.

[99] Jones Intercable comments at 10; *see also* Time Warner comments at 7; Cable & Wireless comments at 11-12 (sections 251 and 252 apply to *all* telecommunications services, and the definitions of "telecommunications," "telecommunications service," and "telecommunications carrier" are defined without reference to jurisdictional boundaries); New Jersey Cable Ass'n, *et al.* reply at 18-19; GSA/DoD reply at 7 (Congress did not intend to expand traditional interstate and intrastate jurisdictional distinctions); Competitive Policy Institute reply at 10.

[100] AT&T comments at 4 (*quoting* § 251(d)(1) of the Act).

[101] AT&T comments at 4-5 (*citing Fidelity Federal Savings and Loan Assoc. v. de la Cuesta*, 458 U.S. 141, 152-154 (1982); *City of New York v. FCC*, 467 U.S. 57, 64 (1988); *Oklahoma Natural Gas v. FERC*, 28 F.3d 1281, 1283 (D.C. Cir. 1994)).

[102] AT&T comments at 5 and nn.3-4; *accord* Cable & Wireless comments at 11 (in section 253, Congress made clear that the Commission has authority to preempt any state requirement that creates a barrier to either interstate or intrastate services, or that is inconsistent with the 1996 Act); MCI comments at 7-8; Sprint comments at 4.

[103] AT&T comments at 5-6.

the Act's purpose of developing local services competition."[104] Sprint, Comcast, and other parties assert that Congress intended section 251 to give the Commission authority over both interstate and intrastate aspects of interconnection, notwithstanding the fact that it left section 2(b) unamended.[105] For example, Comcast contends that section 253(a) authorizes the Commission to preempt any state or local requirement that prohibits or has the effect of prohibiting any interstate or intrastate telecommunications service.[106] In view of the explicit grants of authority in sections 251 and 253, Comcast asserts that it was unnecessary to amend section 2(b). Cable & Wireless contends that the fact that section 251(d)(1) provides that the FCC "shall" in some cases preempt state regulations is evidence that Congress did not believe it was required to amend section 2(b) before delegating intrastate authority to the FCC.[107] AT&T asserts that the fact that prior versions of the legislation amended section 2(b) to except Part II of Title II of the Act is not dispositive; when the language was taken out, it was not listed as a substantive change, but treated as a "minor drafting" or "clerical" change.[108] AT&T asserts that this was an appropriate characterization, because section 2(b) would not have had any effect in any event.

76. Several parties contend that the Act makes clear that states are required to apply FCC rules established under section 251. For example, sections 252(c)(1) and (f)(2) explicitly require the states to apply the FCC's regulations.[109] In addition, section 261(c) provides that state requirements must be "not inconsistent" with Part II of Title II, including the Commission's regulations thereunder.[110] Thus, the parties contend that these provisions constitute express federal preemption, and that section 601(c), which provides that any

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[104] AT&T comments at 6 (section 2(b) cannot be read to nullify section 2(a) and sections 201 to 205) (*citing California v. FCC*, 39 F.3d 919, 931-33 (9th Cir. 1994); *PUC of Texas v. FCC*, 886 F.2d 1325 (D.C. Cir. 1990); *NARUC v. FCC*, 746 F.2d 1492 (D.C. Cir. 1984); *Louisiana PSC v. FCC*, 476 U.S. 355, 375-76 n.4 (1986)).

[105] Sprint comments at 7; Comcast reply at 2-3; NCTA reply at 5-6.

[106] Comcast reply at 2-3.

[107] Cable & Wireless reply at 9-10.

[108] AT&T reply at 4 n.5 (citing Joint Explanatory Statement at 113).

[109] AT&T reply at 2.

[110] Jones Intercable comments at 11-12; MCI reply at 7; MFS reply at 7; New Jersey Cable Ass'n, *et al.* reply at 23.

preemptive effect of the new law must be express, does not establish limits to the FCC's authority to establish regulations under section 251.[111]

77. Sprint states that other provisions of the 1996 Act:

> subordinate state actions and policies with respect to intrastate service to those of the Commission, *e.g.*, sections 253 (entry barriers), 254(f) (universal service), 258 (PIC change procedures), and 276 (payphone services). If Congress had intended the jurisdictional split in section 2(b) to remain unaffected by the 1996 Act, all of these very specific subordinations of state policy to federal policy would be nullities, and much of the 1996 Act would make no sense at all.[112]

Sprint contends that the only way to give meaning to both section 2(b) and the above-referenced provisions is to conclude that the section 2(b) distinctions remain in effect for "retail" services offered to end users, but that the detailed scheme for intercarrier relationships set forth in Part II of Title II supersedes section 2(b).[113] MCI concurs, and adds that this interpretation is consistent with settled principles of statutory construction that the specific prevails over the general, and the later-enacted provision prevails over the earlier-enacted provision.[114]

78. Some state commissions and some other commenters assert that section 251, as well as other provisions of the 1996 Act, support the interpretation that Congress intended states to have a primary role in setting requirements for intrastate interconnection. For example, these parties assert that section 251(d)(3) is evidence that Congress intended to permit states to implement their own access and interconnection regulations, and that this statutory language requires the FCC to fashion its regulations to avoid precluding state interconnection policy or rules.[115] They note that section 251(d)(3) requires consistency with

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[111] New Jersey Cable Ass'n, *et al.* reply at 23; Jones Intercable reply at 15.

[112] Sprint comments at 7.

[113] Sprint comments at 7-8.

[114] MCI comments at 8 (*citing Stendor Enterprises Ltd. v. Armtex, Inc.*, 947 F.2d 727,732 (4th Cir. 1991); *Redhouse v. C.I.R.*, 728 F.2d 1249, 1253 (9th Cir. 1984); *Mesa Petroleum Co. v. FERC*, 688 F.2d 1014, 1016 (5th Cir. 1982)).

[115] Maryland Commission comments at 22; Ohio Commission comments at 16-17 (*citing* Joint Explanatory Statement at 1, 119); *accord. e.g.*, Bogue, Kansas comments at 4; Connecticut Commission comments at 7; NARUC comments at 14; PacTel comments at 14; Pennsylvania Commission comments at 7-9.

the Act, but does not mandate consistency with the FCC's regulations.[116] SNET asserts that, if Congress intended to preclude state discretion to interpret section 251 requirements, it would have preempted all state policies addressing those requirements, rather than just policies that substantially prevent implementation of the statute.[117] Some parties also point out that section 251(d)(3) is entitled "Preservation of state access regulations," and argue that the stated purpose of that provision is to preserve or "grandfather" most, if not all, state access and interconnection regulations.[118] They also allege that section 601(c) of the 1996 Act demonstrates that Congress intended to preserve states' authority over intrastate matters, and that any preemption finding would have to be based on an express provision.[119] Bogue, Kansas states that section 256(c) also makes clear that nothing in that section expands or limits the Commission's authority prior to the enactment of the 1996 Act.[120] The Oregon Commission argues that section 261 also permits states to impose requirements, as long as those requirements are not inconsistent with the 1996 Act.[121]

79. Some state commissions and incumbent LECs contend that the Commission's authority to establish regulations that may preempt state requirements is limited to those instances where section 251 expressly provides for Commission action.[122] Some parties also contend that, because section 252(e)(5) specifically requires the FCC to assume the responsibilities of the state commission if the state commission fails to act under section 252, the FCC's role under section 252 is limited to that specific delegation of authority.[123]

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[116] Maryland Commission comments at 22; Washington Commission comments at 6-7.

[117] SNET reply at 1-2; *accord* Colorado Commission comments at 5-9.

[118] Ohio Commission reply at 3; BellSouth reply at 5.

[119] *See, e.g.*, District of Columbia Commission comments at 6; Maryland Commission comments at 21; NARUC comments at 13; Ohio Commission comments at 15-16; Wyoming Commission comments at 10; BellSouth reply at 5-6.

[120] Bogue, Kansas comments at 5.

[121] Oregon Commission comments at 13-14; *accord* Washington Commission comments at 9; Rural Tel. Coalition reply at 4.

[122] Rural Tel. Coalition comments at 5 (Commission authority should be limited to establishing number portability requirements, regulations for limitations on resale, minimum unbundling requirements, rules for administering the North American Numbering Plan, enforcing existing access and interconnection requirements, and determining whether to treat additional carriers as incumbent LECs); *see also* District of Columbia Commission comments at 8-10; NARUC comments at 14-15; New York Commission comments at 2-3, 8.

[123] *See, e.g.*, NARUC comments at 15; New York Commission comments at 9; PacTel comments at 13.

80. These parties also reject the claim that section 251 takes precedence over section 2(b).[124] They note that section 2(b) was not amended by the 1996 Act, although prior versions of the bills would have done so.[125] Moreover, parties claim that, in other instances, Congress did specifically amend section 2(b) to give the Commission authority over intrastate aspects of specified matters.[126] Bell Atlantic asserts that the failure to amend section 2(b) is "fatal to the notice's proposed federalization of intrastate interconnection and other intrastate matters."[127] The Ohio Commission expressly rejects the suggestion in the NPRM that there was no need to amend section 2(b) because sections 251 and 252 do not affect end user rates.[128]

81. Some parties further contend that preemption must be express, not implied, and that no such express statement was made in section 251.[129] Parties also assert that, by comparison, the Act is "quite clear in preempting states where it intended to do so."[130] For example, the New York Commission asserts that, in certain circumstances, section 254(f) expressly directs states to act in a manner that is "not inconsistent" with FCC rules.[131] NARUC asserts that there is a "well established presumption against finding preemption of State law in areas traditionally regulated by the States" that weighs against an interpretation

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[124] *See, e.g.*, Bell Atlantic comments at 4; Connecticut Commission comments at 5; Oregon Commission comments at 12; Indiana Commission Staff comments at 4-5; Iowa Commission comments at 6.

[125] *See, e.g.*, Maryland Commission comments at 16 (*citing* Conf. Rep. No. 104-230 at 78 and H.R. 1555 Rep. No. 104-204 at 53); *accord* NARUC comments at 10 (*citing Russello v. U.S.*, 464 U.S. 16 (1989)); Oregon Commission comments at 15.

[126] California Commission comments at 11; Connecticut Commission comments at 7 (*citing* the Omnibus Budget Reconciliation Act of 1993 as an example of congressional intent to alter jurisdictional authority); Maryland Commission comments at 20; Ohio Commission comments at 14-15; BellSouth reply at 4.

[127] Bell Atlantic comments at 7.

[128] Ohio Commission comments at 15 (the 1993 amendments to section 2(b) expressly reserved to states responsibility for wholesale rates in general).

[129] *See, e.g.*, NARUC comments at 12 (*citing Hillsborough County v. Automated Medical Laboratories*, 471 U.S. 707, 175 (1985)); Arizona Commission comments at 16; Bogue, Kansas comments at 3 (*citing Gregory v. Ashcroft*, 501 U.S. 452, 460 (1991)); New York Commission comments at 6 (*citing Washington Market v. Hoffman*, 101 U.S. 112 (1879)); Municipal Utilities reply at 5 (FCC may not preempt state regulations that are consistent with the Act).

[130] Bogue, Kansas comments at 4 n.3 (section 251(e) gives FCC "exclusive jurisdiction" over some aspects of Number Administration); Maryland Commission comments at 15; Ohio Commission comments at 12, 16.

[131] New York Commission comments at 8; *see also* NARUC comments at 12 (contrasting section 276, which explicitly provides that Commission regulations shall preempt inconsistent state requirements).

that the FCC has broad regulatory authority to establish rules governing local exchange markets.[132]

82. To support their claim that, in 1934, Congress established a dual regulatory system, and that the FCC's jurisdiction is limited to interstate issues, except where otherwise expressly provided, these parties cite to the Supreme Court's decision in *Louisiana Public Service Comm'n v. FCC*.[133] The Maryland Commission contends that *Louisiana PSC* is controlling here, because: (1) the dual regulatory system was not eliminated by the 1996 Act; (2) the FCC may not rely upon the broad congressional intent to promote competition as a delegation of authority over intrastate issues; and (3) the 1996 Act does not embody a federal regulatory scheme that is so pervasive as to infer that Congress left no room for states to supplement it.[134] PacTel claims that, because section 251 was created after the decision in *Louisiana PSC*, Congress was aware that, if it wanted section 251 to override section 2(b), it would have to do so in an unambiguous manner. Consequentially, because Congress did not amend section 2(b) or otherwise expressly limit its effect, section 2(b) takes precedence over section 251 to the extent the provisions conflict.[135] Several parties offer additional bases for finding that the *Louisiana PSC* decision controls the scope of the Commission's authority under section 251.[136]

3. Discussion

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[132] NARUC comments at 12 (*quoting California v. ARC America Corp.*, 490 U.S. 91, 101 (1989)).

[133] 476 U.S. 335 (1986) (*Louisiana PSC*). In that case, the Supreme Court held that section 220 of the 1934 Act, which directs the FCC to set depreciation regulations, did not give the FCC authority to preempt inconsistent state depreciation regulations for intrastate ratemaking purposes.

[134] Maryland Commission comments at 17-18 (*citing Fidelity Savings and Loan Assn v. de la Cuesta*, 458 U.S. 141, 153 (1982)); *accord* Ohio Commission comments at 11; Oregon Commission comments at 13; Washington Commission comments at 9-10.

[135] PacTel comments at 14-15.

[136] The Maryland Commission further asserts that compliance with both federal and state regulation as envisioned by the 1996 Act is not a physical impossibility that would support a claim of implied preemption. Maryland Commission comments at 18 (*citing Florida Lime & Avocado Growers Inc. v. Paul*, 373 U.S. 132, 142-43 (1963)); *accord* Washington Commission comments at 10. The Ohio Commission avers that it is possible for the FCC to promulgate rules that apply to interstate services only. Ohio Commission comments at 13. Several states also reject the idea that section 251 squarely addresses, and therefore controls, the jurisdictional issue, because there is "no mention of intrastate services or preemption of states' authority over such matters in Section 251." Ohio Commission comments at 12; Maryland Commission comments at 23; *accord* Bell Atlantic comments at 6. Pacific Telesis asserts that sections 251 and 2(b) may be read as internally consistent, and that, under rules of statutory construction, they must be so interpreted. PacTel comments at 12-13 (*citing Washington Market Co v. Hoffman*, 101 U.S. 112 (1879)). Bell Atlantic states that the Supreme Court held in *Louisiana PSC* that the rule of statutory construction that the specific takes precedence over the general does not apply where two provisions "address 'different subject[s]' and therefore 'are not general or specific with respect to each other.'" Bell Atlantic comments at 6 (*quoting Louisiana PSC*, 476 U.S. at 376 n.5); GTE reply at 5.

83. We conclude that, in enacting sections 251, 252, and 253, Congress created a regulatory system that differs significantly from the dual regulatory system it established in the 1934 Act.[137] That Act generally gave jurisdiction over interstate matters to the FCC and over intrastate matters to the states. The 1996 Act alters this framework, and expands the applicability of both national rules to historically intrastate issues, and state rules to historically interstate issues.[138] Indeed, many provisions of the 1996 Act are designed to open telecommunications markets to all potential service providers, without distinction between interstate and intrastate services.

84. For the reasons set forth below, we hold that section 251 authorizes the FCC to establish regulations regarding both interstate and intrastate aspects of interconnection, services, and access to unbundled elements. We also hold that the regulations the Commission establishes pursuant to section 251 are binding upon states and carriers and section 2(b) does not limit the Commission's authority to establish regulations governing intrastate matters pursuant to section 251. Similarly, we find that the states' authority pursuant to section 252 also extends to both interstate and intrastate matters. Although we recognize that these sections do not contain an explicit grant of intrastate authority to the Commission or of interstate authority to the states, we nonetheless find that this interpretation is the only reasonable way to reconcile the various provisions of sections 251 and 252, and the statute as a whole. As we indicated in the NPRM, it would make little sense in terms of economics or technology to distinguish between interstate and intrastate components for purposes of sections 251 and 252.[139]

85. We view sections 251 and 252 as creating parallel jurisdiction for the FCC and the states. These sections require the FCC to establish implementing rules to govern interconnection, resale of services, access to unbundled network elements, and other matters, and direct the states to follow the Act and those rules in arbitrating and approving arbitrated agreements under sections 251 and 252. Among other things, the fact that the Commission is

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[137] According to Senator Pressler, "Progress is being stymied by a morass of regulatory barriers which balkanize the telecommunications industry into protective enclaves. We need to design a *national policy framework* -- a new regulatory paradigm for telecommunications -- which accommodates and accelerates technological change and innovation." 141 Cong. Rec. S7881-2, S7886 (June 7, 1995) (emphasis added). According to Representative Fields, "[Congress] is decompartmentalizing segments of the telecommunications industry, opening the floodgates of competition through deregulation, and most importantly, giving consumers choice . . .", 142 Cong. Rec. H1149 (Feb. 1, 1996).

[138] For example, section 253(a) suggests that states may establish regulations regarding interstate as well as intrastate matters.

[139] We believe that this interpretation is the most reasonable one in light of our expectation that marketing and product offerings by telecommunications carriers will diminish or eliminate the significance of interstate-intrastate distinctions.

required to assume the state commission's responsibilities if the state commission fails to carry out its section 252 responsibilities[140] gives rise to the inevitable inference that both the states and the FCC are to address the same matters through their parallel jurisdiction over both interstate and intrastate matters under sections 251 and 252.

86. The only other possible interpretations would be that: (1) sections 251 and 252 address only interstate aspects of interconnection, services, and access to unbundled elements; (2) the provisions address only the intrastate aspects of those issues; or (3) the FCC's role is to establish rules for interstate aspects, and the states' role is to arbitrate and approve agreements on intrastate aspects. As explained below, none of these interpretations withstands examination. Accordingly, we conclude that sections 251 and 252 address both interstate and intrastate aspects of interconnection services and access to unbundled elements.

87. Some parties have argued that our authority under section 251 is limited by section 2(b). Ordinarily, in light of section 2(b), we would interpret a provision of the Communications Act as addressing only the interstate jurisdiction unless the provision (as well as section 2(b) itself) provided otherwise. That interpretation is contradicted in this case, however, by strong evidence in the statute that the local competition provisions of the 1996 Act are directed to both intrastate and interstate matters. For example, section 251(c)(2), the interconnection requirement, requires LECs to provide interconnection "for the transmission and routing of *telephone exchange service* and exchange access."[141] Because telephone exchange service is a local, intrastate service, section 251(c)(2) plainly addresses intrastate service, but it also addresses interstate exchange access. In addition, we note that in section 253," the statute explicitly authorizes the Commission to preempt intrastate and interstate barriers to entry.[142]

88. More generally, if these sections are read to address only interstate services, the grant of substantial responsibilities to the states under section 252 is incongruous. A statute designed to develop a *national* policy framework to promote local competition cannot reasonably be read to reduce significantly the FCC's traditional jurisdiction over interstate matters by delegating enforcement responsibilities to the states, unless Congress intended also

[140] *See* 47 U.S.C. § 252(e)(5).

[141] 47 U.S.C. § 251(c)(2).

[142] 47 U.S.C. § 253(a).

to implement its national policies by enhancing our authority to encompass rulemaking authority over intrastate interconnection matters.[143]

89. Some parties argue that section 251 addresses solely intrastate matters. We do not find this argument persuasive.[144] Under this narrow view, section 251(c)(6) requiring incumbent LECs to offer physical collocation would apply only to equipment used for intrastate services, while new entrants would be limited to the use of virtual collocation for equipment used in the provision of interstate services, pursuant to the decision in *Bell Atlantic*.[145] Such an interpretation would force new entrants to use different methods of collocation based on the jurisdictional nature of the traffic involved, and would thereby greatly increase new entrants' costs. Moreover, such an interpretation would fail to give effect to Congress's intent in enacting section 251(c)(6) to reverse the result reached in *Bell Atlantic*.[146]

90. Another factor that makes clear that sections 251 and 252 did not address exclusively intrastate matters is the provision in section 251(g), "Continued Enforcement of Exchange Access and Interconnection Requirements." That section provides that BOCs must follow the Commission's "equal access and nondiscriminatory interconnection restrictions (including receipt of compensation)" until they are explicitly superseded by Commission regulations after the date of enactment of the 1996 Act. This provision refers to existing Commission rules governing interstate matters, and therefore it contradicts the argument that section 251 addresses intrastate matters exclusively.

91. Nor does the savings clause of section 251(i) require us to conclude that sections 251 and 252 address only intrastate issues. Section 251(i) provides that "[n]othing in this section shall be construed to limit or otherwise affect the Commission's authority under section 201." This subsection merely affirms that the Commission's preexisting authority

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[143] The legislative history is replete with statements indicating that Congress meant to address intrastate local exchange competition. For instance, Senator Lott stated that "[i]n addressing *local and long distance issues*, creating an open access and sound interconnection policy was the key objective . . ." 141 Cong. Rec. S7906 (June 7, 1995) (emphasis added). Representative Markey noted that "we take down the barriers of *local and long distance* and cable company, satellite, computer software entry into any business they want to get in." 142 Cong. Rec. H1151 (Feb. 1, 1996) (emphasis added).

[144] *See, e.g.*, New York Commission comments at 5-8.

[145] *Bell Atlantic Telephone Companies v. FCC*, 24 F.3d 1441 (D.C. Cir. 1994) (*Bell Atlantic*) (holding that the Commission did not have authority to require physical collocation for the provision of interstate services).

[146] The language in the House bill which closely matches the language that appears in section 251(c)(6), noted that a provision requiring physical collocation was necessary "because a recent court decision indicates that the Commission lacks authority under the Communications Act to order physical collocation." H.R. Rep. No. 204, pt. I, 104th Cong., 1st Sess., at 73 (1995).

under section 201 continues to apply for purely interstate activities. It does not act as a limitation on the agency's authority under section 251.

92. As to the third possible interpretation, the FCC's role is to establish rules for only the interstate aspects of interconnection, and the states' role is to arbitrate and approve only the intrastate aspects of interconnection agreements. No commenters support this position, and we find that it would be inconsistent with the 1996 Act to read into sections 251 and 252 such a distinction. The statute explicitly contemplates that the states are to comply with the Commission's rules, and the Commission is required to assume the state commission's responsibilities if the state commission fails to act to carry out its section 252 responsibilities.[147] Thus, we believe the only logical conclusion is that the Commission and the states have parallel jurisdiction. We conclude, therefore, that these sections can only logically be read to address both interstate and intrastate aspects of interconnection, services, and access to unbundled network elements, and thus to grant the Commission authority to establish regulations under 251, binding on both carriers and states, for both interstate and intrastate aspects.

93. Section 2(b) of the Act does not require a different conclusion. Section 2(b) provides that, except as provided in certain enumerated sections not including sections 251 and 252, "nothing in [the 1934] Act shall be construed to apply or to give to the Commission jurisdiction with respect to . . . charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate communication service by wire or radio of any carrier . . . .".[148] As stated above, however, we have found that sections 251 and 252 do apply to "charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate communication service."[149] In enacting sections 251 and 252 after section 2(b), and squarely addressing therein the issue of interstate and intrastate jurisdiction, we find that Congress intended for sections 251 and 252 to take precedence over any contrary implications based on section 2(b).[150] We note also, that in enacting the 1996 Act, there are other instances where Congress indisputably gave the Commission intrastate jurisdiction without amending section 2(b). For instance, section 251(e)(1) provides that "[t]he Commission shall

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[147] 47 U.S.C. § 252(e)(5).

[148] 47 U.S.C. § 152(b).

[149] 47 U.S.C. § 152(b).

[150] *See, e.g., Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 384 (1992) ("it as a commonplace of statutory construction that the specific governs the general"); *see also* 2 J. Sutherland, Statutory Construction § 22.34 (6th ed.) (where amended and original sections of a statute cannot be harmonized, the new provisions should prevail as the latest declaration of legislative will); *American Airlines, Inc. v. Remis Industries, Inc.*, 494 F.2d 196, 200 (2nd Cir. 1974).

have exclusive jurisdiction over those portions of the North American Numbering Plan that pertain to the United States."[151] Section 253 directs the FCC to preempt state regulations that prohibit the ability to provide intrastate services. Section 276(b) directs the Commission to "establish a per call compensation plan to ensure that payphone service providers are fairly compensated for each and every completed intrastate and interstate call."[152] Section 276(d) provides that "[t]o the extent that any State requirements are inconsistent with the Commission's regulations, the Commission's regulations on such matters shall preempt such State requirements."[153] None of these provisions is specifically excepted from section 2(b), yet *all* of them explicitly give the FCC jurisdiction over intrastate matters. Thus, we believe that the lack of an explicit exception in section 2(b) should not be read to require an interpretation that the Commission's jurisdiction under sections 251 and 252 is limited to interstate services. A contrary holding would nullify several explicit grants of authority to the FCC, noted above, and would render parts of the statute meaningless.[154]

94. Some parties find significance in the fact that earlier drafts of the legislation would have amended section 2(b) to make an exception for Part II of Title II, including section 251, but the enacted version did not include that exception. These parties argue that this change in drafting demonstrates an intention by Congress that the limitations of section 2(b) remain fully in force with regard to sections 251 and 252. We find this argument unpersuasive.

95. Parties that attach significance to the omission of the proposed amendment of section 2(b) rely on a rule of statutory construction providing that, when a provision in a prior draft is altered in the final legislation, Congress intended a change from the prior version. This rule of statutory construction has been rejected, however, when changes from one draft to another are not explained.[155] In this instance, the only statement from Congress regarding the meaning of the omission of the section 2(b) amendment appears in the Joint Explanatory Statement of the Conference Report. According to the Joint Explanatory Statement, all differences between the Senate Bill, the House Amendment, and the substitute reached in conference are noted therein "except for clerical corrections, conforming changes made

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[151] 47 U.S.C. § 251 (e)(1).

[152] 47 U.S.C. § 276(b).

[153] 47 U.S.C. § 276(d).

[154] *See* Sprint comments at 7.

[155] *Mead Corp* v. *Tilley*, 490 U.S. 714, 723 (1989); *Rastelli* v. *Warden*, 782 F.2d 17, 23 (2d Cir. 1986); *Drummond Coal* v. *Watt*, 735 F.2d 469, 474 (11th Cir. 1984).

necessary by agreements reached by the conferees, and minor drafting and clerical changes."[156] Because the Joint Explanatory Statement did not address the removal of the section 2(b) amendment from the final bill, the logical inference is that Congress regarded the change as an inconsequential modification rather than a significant alteration. Moreover, it seems implausible that, by selecting the final version, Congress intended a radical alteration of the Commission's authority under section 251, given the total lack of legislative history to that effect. We conclude that elimination of the proposed amendment of section 2(b) was a nonsubstantive change because, as AT&T contends, such amendment was unnecessary in light of the grants of authority under sections 251 and 252, and would have had no practical effect.[157]

96. Some parties have argued that, to the extent that sections 251 and 252 address intrastate matters, the Commission's rulemaking authority under those sections is limited to those instances where Commission action regarding intrastate matters is specifically mandated, such as number administration. We disagree. There is no language limiting the Commission's authority to establish rules under section 251. To the contrary, section 251(d)(1) affirmatively requires Commission rules, stating that "the Commission *shall* complete *all* actions necessary to implement the requirements of *this section*."[158] Pursuant to sections 4(i), 201(b), and 303(r) of the Act, the Commission generally has rulemaking authority to implement all provisions of the Communications Act. Courts have held that the Commission, pursuant to its general rulemaking authority, has "expansive" rather than limited powers.[159] Further, where Congress has expressly delegated to the Commission rulemaking responsibility with respect to a particular matter, such delegation constitutes "something more than the normal grant of authority permitting an agency to make ordinary rules and regulations . . .".[160] Indeed, to read these provisions otherwise would negate the requirement that states ensure that arbitrated agreements are consistent with the Commission's rules. Thus, the explicit rulemaking requirements pointed out by some of the parties is best read as giving the Commission more jurisdiction than usual, not less. We believe that the delegation of authority set forth in section 251(d)(1) is "expansive" and not limited. We therefore reject

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[156] Joint Explanatory Statement at 113.

[157] AT&T reply at 4 n.5.

[158] 47 U.S.C. § 251(d)(1) (emphasis added).

[159] *National Broadcasting Co. v. United States*, 319 U.S. 190, 219 (1943); *see also Federal Communications Commission v. National Citizens Committee for Broadcasting*, 436 U.S. 775, 793 (1978).

[160] *Fulani v. FCC*, 49 F.3d 904, 909 (2d Cir. 1995) (cite omitted); *see also Kay v. FCC*, 443 F.2d 638, 640 (D.C.Cir. 1970).

assertions that the Commission has authority to establish regulations regarding intrastate matters only with respect to certain provisions of section 251, such as number administration.

97. Moreover, the Court in *Louisiana PSC* does not suggest a different result. The reasoning in *Louisiana PSC* applies to the dual regulatory system of the 1934 Act. As set forth above, however, in sections 251-253, Congress amended the dual regulatory system that the Court addressed in *Louisiana PSC*. As a result, preemption in this case is governed by the usual rule, also recognized in *Louisiana PSC*, that an agency, acting within the scope of its delegated authority, may preempt inconsistent state regulation.[161] As discussed above, Congress here has expressed an intent that our rules apply to intrastate interconnection, services, and access to network elements. Therefore, *Louisiana PSC* does not foreclose our adoption of regulations under section 251 to govern intrastate matters.

98. Parties have raised other arguments suggesting that the Commission lacks authority over intrastate matters. We are not persuaded by the argument that sections 256(c) and 261, as well as section 601(c) of the 1996 Act, evince an intent by Congress to preserve states' exclusive authority over intrastate matters. In fact, section 261 supports the finding that the Commission may establish regulations regarding intrastate aspects of interconnection, services and access to unbundled elements that the states may not supersede. Section 261(b) *generally* permits states to enforce regulations prescribed prior to the date of enactment of the 1996 Act, and to prescribe regulations after such date, if such regulations are not inconsistent with the provisions of Part II of Title II.[162] Section 261(c) *specifically* provides that nothing in Part II of Title II "precludes a State from imposing requirements on a telecommunications carrier for intrastate services that are necessary to further competition in the provision of telephone exchange service or exchange access, as long as the State's requirements are not inconsistent with this part *or the Commission's regulations to implement this part.*"[163] We conclude that state access and interconnection obligations referenced in section 251(d)(3) fall within the scope of section 261(c). Section 261(c), as the more specific provision, controls over section 261(b) for matters that fall within its scope.[164] We note, too, that section 261(c) encompasses all state requirements. It is not limited to requirements that were prescribed prior to the enactment of the 1996 Act. By providing that state requirements for *intrastate* services must be consistent with the Commission's regulations, section 261(c) buttresses our

[161] *Louisiana PSC*, 476 U.S. at 368.

[162] 47 U.S.C. § 261(b).

[163] 47 U.S.C. § 261(c) (emphasis added).

[164] *Morton v. Mancari*, 417 U.S. 535, 550-51 (1974).

conclusion that the Commission may establish regulations regarding intrastate aspects of interconnection, services, and access to unbundled elements.

99. Section 601 of the 1996 Act and section 256 also are consistent with our conclusion. Section 601(c) of the 1996 Act provides that the Act and its amendments "shall not be construed to modify, impair, or supersede Federal, State, or local law unless expressly so provided in such Act or amendments."[165] We conclude that section 251(d)(1), which requires the Commission to "establish regulations to implement the requirements of this section,"[166] and section 261(c), were expressly intended to modify federal and state law and jurisdictional authority.

100. Section 256, entitled "Coordination for Interconnectivity," has no direct bearing on the issue of the Commission's authority under section 251, because it provides only that "[n]othing *in this section* shall be construed as expanding or limiting any authority that the Commission may have under law in effect before the date of enactment of the Telecommunications Act of 1996."[167] That provision is relevant, however, as a contrast to section 251, which does not contain a similar statement that the scope of the Commission's authority is unchanged by section 251.[168]

101. We further conclude that the Commission's regulations under section 251 are binding on the states, even with respect to intrastate issues. Section 252 provides that the agreements state commissions arbitrate must comply with the Commission's regulations established pursuant to section 251. In addition, section 253 requires the Commission to preempt state or local regulations or requirements that "prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service."[169] As discussed above, section 261(c) provides further support for the conclusion that states are bound by the regulations the Commission establishes under section 251.

102. We disagree with claims that section 251(d)(3) "grandfathers" existing state regulations that are consistent with the 1996 Act, and that such state regulations need not

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[165] Telecommunications Act of 1996, § 601(c)(1).

[166] 47 U.S.C. § 251(d)(1).

[167] 47 U.S.C. § 256(c) (emphasis added).

[168] *Russello v. United States*, 464 U.S. 16, 23 (1983); *Cramer v. Internal Revenue Service*, 64 F.3d 1406, 1412 (9th Cir. 1995) (where Congress includes a provision in one section of statute but omits it in another section of the same Act, it should not be implied where it is excluded).

[169] 47 U.S.C. § 253(a).

comply with the Commission's implementing regulations. Section 251(d)(3) only specifies that the Commission may not preclude enforcement of state access and interconnection requirements that are consistent with section 251, and that do not substantially prevent implementation of the requirements of section 251 or the purposes of Part II of Title II. In this Report and Order, we set forth only such rules that we believe are necessary to implement fully section 251 and the purposes of Part II of Title II. Thus, state regulations that are inconsistent with our rules may "substantially prevent implementation of the requirements of this section and the purposes of [Part II of Title II]."[170]

103. We are not persuaded by arguments that, because other provisions of the 1996 Act specifically require states to comply with the Commission's regulations, the absence of such requirement in section 251(d)(3) indicates that Congress did not intend such compliance. Section 251(d)(3) permits states to prescribe and to enforce access and interconnection requirements only to the extent that such requirements "are consistent with the requirements" of section 251[171] and do not "substantially prevent implementation" of the requirements of section 251 and the purposes of Part II of Title II.[172] The Commission is required to establish regulations to "implement the requirements of the section."[173] Therefore, in order to be consistent with the requirements of section 251 and not "substantially prevent" implementation of section 251 or Part II of Title II, state requirements must be consistent with the FCC's implementing regulations.[174]

D. Commission's Legal Authority and the Adoption of National Pricing Rules

1. Background

104. In the NPRM, we sought comment on our tentative conclusion that sections 251(c)(2), (c)(3), and (c)(6) establish the Commission's legal authority under section 251(d) to adopt pricing rules to ensure that the rates, terms, and conditions for interconnection, access to

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[170] 47 U.S.C. § 251(d)(3)(C).

[171] 47 U.S.C. § 251(d)(3)(B).

[172] 47 U.S.C. § 251(d)(3)(C).

[173] 47 U.S.C. § 251(d)(1).

[174] We recognize that, in some instances, whether particular state requirements are consistent with the Commission's rules may need to be considered on a case-by-case basis.

unbundled network elements, and collocation are just, reasonable, and nondiscriminatory.[175] We also sought comment on our tentative conclusion that sections 251(b)(5) and 251(c)(4) establish our authority to define "wholesale rates" for purposes of resale, and "reciprocal compensation arrangements" for purposes of transport and termination of telecommunications services.[176] In addition, we asked parties to comment on our tentative conclusion that the Commission's statutory duty to implement the pricing requirements of section 251, as elaborated in section 252, requires that we establish pricing rules interpreting and further explaining the provisions of section 252(d). The states would then apply these rules in establishing rates pursuant to arbitrations and in reviewing BOC statements of generally available terms and conditions.[177]

105. We further sought comment on our tentative conclusion that national pricing rules would likely reduce or eliminate inconsistent state regulatory requirements, increase the predictability of rates, and facilitate negotiation, arbitration, and review of agreements between incumbent LECs and competitive providers.[178] We also sought comment on the potential consequences of the Commission not establishing specific pricing rules.[179]

2. Comments

106. *Legal Authority.* The Department of Justice, GSA/DoD, many potential new entrants, and a few state commissions maintain that the Act gives the Commission a critical role in establishing national pricing rules to ensure that the rates for interconnection, access to unbundled network elements, and collocation are just, reasonable, and nondiscriminatory.[180] They contend that section 251(d)(1) specifically directs the Commission, without limitation, to

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[175] NPRM at para. 117.

[176] *Id.* at 118.

[177] *Id.* at para. 118.

[178] *Id.* at para. 119.

[179] *Id.*

[180] *See, e.g.*, DoJ comments at 24-25; GSA/DoD comments at 8, reply at 6; Teleport comments at 44; ALTS comments at 33; GST comments at 25-26; Hyperion comments at 19; ACSI comments at 53, reply at 18-19; MFS comments at 49; MCI comments at 59; Sprint comments at 42; Cox comments at 22; TCI comments at 6; Time Warner comments at 45; WinStar comments at 28, reply at 6-7; Comcast reply at 12; AT&T reply at 5; Kentucky Commission comments at 3; Wyoming Commission comments at 27; *see also* NCTA comments at 8-9; Texas Public Utility Counsel comments at 15; Jones Intercable comments at 10-12, reply at 10-13 (arguing that the Commission should adopt national binding pricing rules); New Jersey Cable Ass'n, *et al.* reply at 6-9, 11 (arguing that the pricing rules adopted by the Commission should be binding); Vanguard reply at 4-5.

develop pricing rules governing transport and termination, interconnection, the provisioning of unbundled network elements, and resale.[181] These parties maintain that nothing in sections 251 and 252 expressly precludes the Commission from establishing pricing rules for the states to apply.[182] Therefore, they argue that the broad grant of authority under section 251(d)(1) includes authority to establish pricing rules.[183]

107. On the other hand, most state commissions, BOCs, and incumbent LEC trade associations contend that nothing in the 1996 Act specifically authorizes the Commission to adopt pricing rules.[184] A group of state commissions and NARUC contend that the Commission's authority to implement the requirements of section 251 is limited to the express activities assigned to the Commission in that section, such as prescribing regulations for resale and numbering portability, determining unbundled network elements, and establishing a North American Numbering Plan Administrator (NANPA) and a cost recovery mechanism for the administrators' operations.[185] The New York Commission contends that the 1996 Act is unambiguous in reserving intrastate pricing to the states under section 252(d), and that any Commission regulations would apply only to states that do not act to open local markets to competition and to those provisions in section 251 that require specific Commission rules.[186] The Ohio Commission asserts that section 251(d)(3) explicitly provides that the Commission

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[181] DoJ comments at 24-25; Sprint comments at 42; Teleport comments at 44; GST comments at 25-26.

[182] *Id*; *see also* Citizens Utilities comments at 15-16.

[183] DoJ comments at 24-25; Sprint comments at 42; Teleport comments at 44; GST comments at 25-26.

[184] *See, e.g.*, Wisconsin Commission comments at 4; Ohio Commission comments at 36-39; Florida Commission comments at 24-25; Colorado Commission comments at 10; Pennsylvania Commission comments at 10-11, 26-27; Washington Commission comments at 23; Maryland Commission comments at 11; South Carolina Commission comments at 2; Minnesota Commission reply at 2-3; Nebraska Rural Development Commission comments at 1; Virginia Commission Staff comments at 2-3; Mass. Commission comments at 4; Idaho Commission comments at 10; New York Commission comments at 10, 23, reply at 4-5; Georgia Commission comments at 2-3, 7; Arizona Commission comments at 18; District of Columbia Commission comments at 24-28 (stating that the Commission has authority to adopt non-binding guidelines that would be helpful to states); Missouri Commission comments at 7-8; Texas Commission comments at 21; Alabama Commission comments at 6, 9, 22; Maine Commission, *et al.* comments at 2-4; Illinois Commission comments at 8, 41; Indiana Commission comments at 4-5; New Hampshire Commission, *et al.* reply at 3; NARUC comments at 16-20, reply at 3-5; PacTel comments at 13, 63; SBC comments at 51-53, 70-71; BellSouth comments at 48-49, reply at 31-32; Rural Tel. Coalition comments at 24; USTA comments at 4-5; GTE comments at 59, reply at 3-5; SNET comments at 28; TDS comments at 17 n.14.

[185] NARUC comments at 14-15; Maine Commission, *et al.* comments at 2-4; *see also* GTE comments at 6-7.

[186] New York Commission comments at 2-3; *see also* Pennsylvania Commission comments at 10-11, 26-27; Virginia Commission Staff comments at 3.

shall not preclude states from enforcing or implementing the requirements of section 251, as long as the state's policy is consistent with section 251.[187]

108. The Illinois Commission states that section 252(d) governs pricing standards for interconnection and network element charges, transport and termination of traffic, and wholesale services.[188] It argues that each provision expressly establishes standards under which state commissions are to determine prices, without reference to any Commission rulemaking.[189] The Illinois Commission further contends that in establishing standards for state commissions to apply during arbitration under section 252(b), subsections 252(c)(1) and 252(c)(2) distinguish between section 251 and the Commission's regulations prescribed thereunder, and the pricing standards set forth in section 252(d), which do not reference any Commission regulations.[190] The Illinois Commission infers from these subsections that Congress did not intend for the Commission to exercise broad rulemaking authority under sections 251 and 252.[191] Other state commissions similarly argue that the general language of section 251(c)(2)(D) and the specific grant of authority to states under section 252(d) to price interconnection elements reveal Congress's intent to confer responsibility over pricing on the states.[192]

109. *National Standards.* The Department of Justice, the SBA, and most of the IXCs, CAPs, and cable companies addressing this issue agree that the Commission should establish national pricing rules for interconnection and unbundled elements under 252(d)(1) for the reasons stated in the NPRM.[193] Citizens Utilities, NEXTLINK, and WinStar also support the

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[187] Ohio Commission comments at 36-39.

[188] Illinois Commission comments at 7.

[189] *Id.*

[190] *Id.* at 8, 41.

[191] *Id.*

[192] Colorado Commission comments at 10; Pennsylvania Commission comments at 10-11, 26-27; Virginia Commission comments at 2-3; Mass. Commission comments at 4; Arizona Commission comments at 18.

[193] *See, e.g.*, DoJ comments at 25-26; SBA comments at 4; LDDS comments at 19-20, 58; AT&T comments at 45; LCI comments at 3, 12; MCI comments at 59; Sprint comments at 42, reply at 5-11; CompTel comments at 19-22; Vartec, *et al.* comments at 10 (national pricing standards for databases); ALTS comments at 33; Teleport comments at 45-46, reply at 32; Hyperion comments at 3, reply at 5-6; ASCI comments at 51-53; Intermedia comments at 14; MFS comments at 52-54, 58, 64; Cable & Wireless comments at 32; Cox comments at 12, 22, reply at 5, 13-16; Comcast comments at 44; Continental comments at 16; TCI comments at 22-24, reply at 1-3; Jones Intercable comments at 2-4, reply at 3, 9; Time Warner comments at 47, reply at 2, 7-9; *see also*

Commission's tentative conclusion that national pricing rules should be adopted to guide the states in facilitating the negotiation and arbitration process.[194] The majority of consumer organizations urge the Commission to establish uniform, national rules and argue that inconsistent and unpredictable state rules would inhibit or delay the efforts of new entrants to obtain interconnection arrangements with incumbent LECs and undermine their ability to raise capital in the financial markets.[195] Several state commissions also support the adoption of national rules. For example, the Kentucky Commission contends that national pricing rules would facilitate competitive entry,[196] and the North Dakota Commission argues that such national rules would provide significant assistance to those states that have not opened their local markets to competition.[197]

110. The RBOCs, with the exception of Ameritech, generally oppose the adoption of national pricing rules on legal and policy grounds.[198] The majority of states also express opposition to national pricing rules and argue that section 251(d)(3) reserves to the states the details of local service competition.[199] Other state commissions advocate that the Commission

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Vanguard reply at 3, 7-9.

[194] *See, e.g.*, Citizens Utilities comments at 15-16; NEXTLINK comments at 24-25; WinStar comments at 28; *see also* CompTel comments at 19-20.

[195] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 3-4, 11, 29-32; SDN Users Ass'n comments at 2; CFA/CU comments at 26; Competition Policy Institute comments at 9-10, reply at 10; *see also* ITIC comments at 3-5; TRACER comments at 3-4, reply at 6; NTIA reply at 15-16.

[196] *See, e.g.*, Kentucky Commission comments at 4; *see also* Texas Public Utility Counsel comments at 15.

[197] *See, e.g.*, North Dakota Commission comments at 1-2.

[198] *See, e.g.*, NYNEX comments at 40-41; SBC comments at 48, 50, reply at 29, 33; PacTel comments at 2, 8, 64, and 65, reply at 23; BellSouth comments at 49, 55, reply at 33; Ameritech comments at 59 (favoring national pricing principles that allow incumbent LECs to recover all costs); *see also* Cincinnati Bell comments at 20 (supporting FCC rules, but arguing that rules should only be general and for the purpose of guiding states in the negotiation and arbitration process).

[199] *See, e.g.*, Ohio Commission comments at 39-40; Colorado Commission comments at 28, reply at 4-6; Wyoming Commission comments at 20, 27-29; Minnesota reply at 2-3; Maryland Commission comments at 12; New York Commission comments at 11-12, reply at 9-10; Georgia Commission comments at 7, reply at 1; Indiana Commission comments at 2, 21; Alaska Commission comments at 4; Missouri Commission comments at 8; Oregon Commission comments at 30; Alabama Commission comments at 20-21; North Carolina Commission comments at 10; Maine Commission, *et al.* comments at 2-3; California Commission comments at 11-12, reply at 18; Arizona Commission comments at 19; Connecticut Commission comments at 9-10; Washington Commission reply at 2; New Hampshire Commission, *et al.* reply at 2-3; Mississippi Commission comments at 13; Pennsylvania Commission comments at 26; NARUC comments at 23, 24, reply at 12-13; Florida Commission comments at 25; *see also* Ohio Consumers' Counsel comments at 21, 27; MECA comments at 39-41; Municipal Utilities comments at 17-18, reply at 7; Attorneys General, *et al.* reply at 2, 7; Puerto Rico Tel. comments at 5-6; reply at 9-10; Alaska Tel. Ass'n comments at 2.

should adopt either preferred outcomes for interconnection that narrow the range of issues in arbitration and negotiation,[200] or general nonbinding guidelines that recognize the rights of states to adopt their own pricing standards.[201] For instance, the Illinois Commission contends that, if the Commission finds that it has authority to establish pricing rules to govern the states, it could determine that rates for interconnection and unbundled network elements are to be based upon forward-looking costs rather than historical costs, and leave all other details to the states. In addition, the Illinois Commission argues that any pricing standards that the Commission prescribes should be focused narrowly on those services addressed in section 252(d).[202] The Iowa Commission maintains that the Commission's rules may be explicit only to the extent that they prohibit state policies that are inconsistent with section 251.[203] Some incumbent LEC trade associations suggest that the Commission adopt only broad guidelines and minimum pricing requirements.[204] NADO, Joint Consumer Advocates, and the Rural Tel. Coalition oppose the adoption of any national pricing rules on the ground that such a regime would not allow for flexibility and innovation.[205] The Rural Tel. Coalition further asserts that if the Commission insists on prescribing pricing standards for all states, it must take into account the myriad of different classes of customers, geographic characteristics, population densities, and technologies.[206]

3. Discussion

111. In adopting sections 251 and 252, we conclude that Congress envisioned complementary and significant roles for the Commission and the states with respect to the

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[200] *See* Washington Commission comments at 2.

[201] *See, e.g.*, Pennsylvania Commission comments at 28; South Carolina Commission comments at 3; Illinois Commission comments at 41, reply at 12-13; Washington Commission comments at 2, 22; *see also* NYNEX comments at 42.

[202] *See* Illinois Commission comments at 41-43.

[203] *See* Iowa Commission comments at 5.

[204] *See, e.g.*, NECA comments at 6; USTA comments at 37; *see also* George Washington Urban League comments at 2; Alliance for Public Technology comments at 9-11, reply at 1; ALLTEL comments at 4-7, reply at summary.

[205] *See* NADO, *et al.* at 4, 6; Joint Consumer Advocates reply at 9-10; Rural Tel. Coalition comments at 19, reply at 13-14.

[206] Rural Tel. Coalition comments at 19, reply at 14.

rates for section 251 services, interconnection, and access to unbundled elements.[207] We interpret the Commission's role under section 251 as ensuring that rates are just, reasonable, and nondiscriminatory: in doing so, we believe it to be within our discretion to adopt national pricing rules in order to ensure that rates will be just, reasonable, and nondiscriminatory. The Commission is also responsible for ensuring that interconnection, collocation, access to unbundled elements, resale services, and transport and termination of telecommunications are reasonably available to new entrants.[208] The states' role under section 252(c) is to establish specific rates when the parties cannot agree, consistent with the regulations prescribed by the Commission under sections 251(d)(1) and 252(d).

112. While we recognize that sections 201 and 202 create a very different regulatory regime from that envisioned by sections 251 and 252, we observe that Congress used terms in section 251, such as the requirement that rates, terms, and conditions be "just, reasonable, and nondiscriminatory," that are very similar to language in sections 201 and 202. This lends additional support for the proposition that Congress intended to give us authority to adopt rules regarding the justness and reasonableness of rates pursuant to section 251, comparable in some respects to the authority Congress gave us pursuant to sections 201 and 202.

113. We believe that national pricing rules are a critical component of the interconnection regime set out in sections 251 and 252. Congress intended these sections to promote opportunities for local competition, and directed us to establish regulations to ensure that rates under this regime would be economically efficient. This, in turn, should reduce potential entrants' capital costs, and should facilitate entry by all types of service providers, including small entities.[209] Further, we believe that national rules will help states review and arbitrate contested agreements in a timely fashion. From August to November and beyond, states will be carrying the tremendous burden of setting specific rates for interconnection and network elements, for resale, and for transport and termination when parties bring these issues before them for arbitration. As discussed in more detail below, we are setting forth default proxies for states to use if they are unable to set these rates using the necessary cost studies within the statutory time frame. After that, both we and the states will need to review the level of competition, revise our rules as necessary, and reconcile arbitrated interconnection arrangements to those revisions on a going-forward basis.

114. We believe that national rules should reduce the parties' uncertainty about the outcome that may be reached by different states in their respective regulatory proceedings,

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[207] *See infra*, Sections VII and VIII.

[208] For a further discussion of specific pricing rules, *see infra*, Section VII.

[209] *See* Regulatory Flexibility Act, 5 U.S.C. § 601 *et seq.*

which will reduce regulatory burdens for all parties including small incumbent LECs and small entities. A national regime should also help to ensure consistent federal court decisions on review of specific state orders under sections 251 and 252.[210] In addition, under the national pricing rules that we adopt for interconnection and unbundled network elements, states will retain the flexibility to consider local technological, environmental, regulatory, and economic conditions. Failure to adopt national pricing rules, on the other hand, could lead to widely disparate state policies that could delay the consummation of interconnection arrangements and otherwise hinder the development of local competition. Lack of national rules could also provide opportunities for incumbent LECs to inhibit or delay the interconnection efforts of new competitors, and create great uncertainty for the industry, capital markets, regulators, and courts as to what pricing policies would be pursued by each of the individual states, frustrating the potential entrants' ability to raise capital. In sum, we believe that the pricing of interconnection, unbundled elements, resale, and transport and termination of telecommunications is important to ensure that opportunities to compete are available to new entrants.

115. As we observed in the NPRM,[211] section 251 explicidy sets forth certain requirements regarding rates for interconnection, access to unbundled elements, and related offerings. Sections 251(c)(2) and (c)(3) require that incumbent LECs' "*rates*, terms, and conditions" for interconnection and unbundled network elements be "just, reasonable, and nondiscriminatory in accordance with . . . the requirements of sections 251 and 252."[212] Section 251(c)(4) requires that incumbent LECs offer "for resale at wholesale *rates* any telecommunications service that the carrier provides at retail to subscribers who are not telecommunications carriers," without unreasonable conditions or limitations.[213] Section 251(c)(6) provides that all LECs must provide physical collocation of equipment, "on *rates*, terms, and conditions that are just, reasonable, and nondiscriminatory."[214] Section 251(b)(5) requires that all LECs "establish reciprocal *compensation* arrangements for the transport and termination of telecommunications."[215] Section 251(d)(1) further expressly directs the

[210] *See* 47 U.S.C.§ 252(e)(6).

[211] NPRM at para. 117.

[212] 47 U.S.C. §§ 251(c)(2) and (c)(3) (emphasis added).

[213] 47 U.S.C. § 251(c)(4) (emphasis added).

[214] 47 U.S.C. § 251(c)(6) (emphasis added).

[215] 47 U.S.C. § 251(b)(5) (emphasis added).

Commission, without limitation, to "complete all actions necessary to implement the requirements of [section 251]."[216]

116. Section 252 generally sets forth the procedures that state commissions, incumbent LECs, and new entrants must follow to implement the requirements of section 251 and establish specific interconnection arrangements. Section 252(c)(1) provides that "in resolving by arbitration . . . any open issues and imposing conditions upon the parties to the agreement, a State commission shall . . . ensure that such resolution and conditions meet the requirements of section 251, *including the regulations prescribed by the Commission pursuant to section 251.*"[217]

117. We conclude that, under section 251(d)(1), Congress granted us broad authority to complete all actions necessary to implement the requirements of section 251, including actions necessary to ensure that rates for interconnection, access to unbundled elements, and collocation are "just, reasonable, and nondiscriminatory."[218] We also determine that the statute grants us the authority to define reasonable "wholesale rates" for purposes of services to be resold, and "reciprocal compensation" for purposes of transport and termination of telecommunications.[219] The argument advanced by the New York Commission, NARUC, and others that the Commission's implementing authority under section 251(d)(1) is limited to those provisions in section 251 that mandate specific Commission rules, such as prescribing regulations for number portability, unbundling, and resale, reads into section 251(d)(1) limiting language that the section does not contain. Congress did not confine the Commission's rulemaking authority to only those matters identified in sections 251(b)(2), 251(c)(4)(B), and 251(d)(2), and there is no basis for inferring such an implicit limitation. A narrow reading of section 251(d)(1), as proposed by the New York Commission, NARUC, and others, would require the Commission to neglect its statutory duty to implement the provisions of section 251 and to promote rapid competitive entry into local telephone markets.

118. We also reject the arguments raised by several state commissions that the language in section 252(c) indicates Congress's intent for the Commission to have little or no authority with respect to pricing of interconnection, access to unbundled elements, and collocation. We do not believe that the statutory directive that state commissions establish rates according to section 252(d) restricts our authority under section 251(d)(1). States must

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[216] 47 U.S.C. § 251(d)(1).

[217] 47 U.S.C. § 252(c)(1) (emphasis added).

[218] *See* 47 U.S.C. §§ 251(c)(2), (c)(3), and (c)(6).

[219] *See* 47 U.S.C. §§ 251(b)(5) and (c)(4).

comply with both the statutory standards under section 252(d) *and* the regulations prescribed by the Commission pursuant to section 251 when arbitrating rate disputes or when reviewing BOC statements of generally available terms. Section 252(c) enumerates three requirements that states must follow in arbitrating issues.[220] These requirements are not set forth in the alternative; rather, states must comply with all three.

119. We further reject the argument that section 251(d)(3) restricts the Commission's authority to establish national pricing regulations. Section 251(d)(3) provides that the Commission shall not preclude the enforcement of any regulation, order, or policy of a state commission that, *inter alia*, is consistent with the requirements of section 251 and does not substantially prevent implementation of the requirements of section 251. This subsection, as discussed in section II.C., *supra*, is intended to allow states to adopt regulations that are not inconsistent with the Commission's rules; it does not address state policies that are inconsistent with the pricing rules established by the Commission.

120. We also address the impact of our rules on small incumbent LECs. For example, Rural Tel. Coalition argues that rigid rules, based on the properties of large urban LECs, cannot blindly be applied to small and rural LECs.[221] As discussed above, however, we believe that states will retain sufficient flexibility under our rules to consider local technological, environmental, regulatory, and economic conditions. We also note that section 251(f) may provide relief to certain small carriers.[222]

E. Authority to Take Enforcement Action

1. Background

121. The Commission's implementation of section 251 must be given full effect in arbitrated agreements and incorporated into all such agreements. There is judicial review of such arbitrated agreements, and one issue surely will be the adherence of these agreements to our rules. The Commission will have the opportunity to participate, upon request by a party or a state or by submitting an *amicus* filing, in the arbitration or the judicial review thereof. To clarify our potential role, we consider the extent of the Commission's authority to review and enforce agreements entered into pursuant to section 252. Section 252(e)(6) provides that, in "any case in which a State commission makes a determination under this section, any party aggrieved by such determination may bring an action in an appropriate Federal district court

[220] *See* 47 U.S.C. §§ 252(c)(1), (c)(2), and (c)(3).

[221] Rural Tel. Coalition reply at 14.

[222] *See* 47 U.S.C. § 251(f).

to determine whether the agreement or statement meets the requirements of section 251 and this section."[223]

122. In the NPRM, we sought comment on the relationship between sections 251 and 252 and the Commission's existing authority under section 208(a), which allows any person to file a complaint with the Commission regarding "anything done or omitted to be done by any common carrier subject to this Act, in contravention of the provisions thereof . . ."[224] We asked whether section 208 gives the Commission authority over complaints alleging violations of requirements set forth in sections 251 or 252. We also sought comment on the relationship between sections 251 and 252 and any other applicable Commission enforcement authority. We further sought comment on how we might increase the effectiveness of the Commission's enforcement mechanisms. Specifically, we asked for comment on how private rights of action might be used under the Act, and the Commission's role in speeding dispute resolution in forums used by private parties.

2. Comments

123. The majority of commenters agree that the Commission's section 208 complaint authority extends to the acts or omissions of common carriers in contravention of sections 251 and 252.[225] TCI further asserts that the Commission retains authority to issue declaratory rulings pursuant to the Administrative Procedure Act, 5 U.S.C. 554(e), and to initiate investigations pursuant to section 403 of the Communications Act.[226] Several state commissions argue, however, that allowing parties to file section 208 complaints would be inconsistent with the states' preeminent role under sections 251 and 252, at least in some circumstances. For example, the New York Commission contends that, to the extent that sections 251 and 252 apply to both interstate and intrastate services, the FCC only has authority to hear complaints regarding interstate communications.[227] The Illinois Commission asserts that a section 208 remedy would be appropriate only after an agreement is

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[223] 47 U.S.C. § 252(e)(6).

[224] *See* 47 U.S.C. § 208; *see also* NPRM at para. 41.

[225] *See, e.g.*, ALTS comments at 7; AT&T comments at 10-11; BellSouth comments at 9; CompTel comments at 103; Florida Commission comments at 10-11; Ind. Cable & Telecomm. Ass'n reply at 4; Jones Intercable comments at 13-14; MCI comments at 7-8; MFS comments at 8-9; Ohio Commission comments at 17; Sprint comments at 8-9; TCI comments at 10; TCC comments at 62.

[226] TCI comments at 10.

[227] New York Commission reply; *see also* Wyoming Commission comments at 15-16.

implemented, and only to the extent the complaint does not allege that the agreement violates standards set forth in sections 251 and 252.[228]

3. Discussion

124. Consistent with our decision in *Telephone Number Portability*[229] and the views of most commenters, we conclude that parties have several options for seeking relief if they believe that a carrier has violated the standards under section 251 or 252. Pursuant to section 252(e)(6), a party aggrieved by a state commission arbitration determination under section 252 has the right to bring an action in federal district court.[230] Federal district courts may choose to stay or dismiss proceedings brought pursuant to section 252(e)(6), and refer issues of compliance with the substantive requirements of sections 251 and 252 to the Commission under the primary jurisdiction doctrine.[231] We find, however, that federal court review is not the exclusive remedy regarding state determinations under section 252. The 1996 Act is clear when it intends for a remedy to be exclusive. For example, section 252(e)(6) provides that, if a state commission fails to act, as described in section 252(e)(5), "the proceeding by the Commission under [section 252(e)(5)] and any judicial review of the Commission's actions *shall be the exclusive remedies* for a State commission's failure to act."[232] In contrast, the succeeding sentence in section 252(e)(6) provides that any party aggrieved by a state commission determination under section 252 "*may* bring an action in an appropriate Federal district court . . . ."[233]

125. The Commission also stands ready to provide guidance to states and other parties regarding the statute and our rules. In addition to the informal consultations that we hope to continue with state commissions, they or other parties may at any time seek a declaratory

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[228] Illinois Commission comments at 16-18.

[229] *See Number Portability Order*.

[230] Commenters also suggest that the statute's provision for federal district court review of state public utility commission decisions is inconsistent with the 11th Amendment. That issue is not properly before the Commission since it is the federal courts that will have to determine the scope of their jurisdiction and in any case "regulatory agencies are not free to declare an act of Congress unconstitutional." *See Meredith Corp. v. FCC*, 809 F.2d 863, 873 (D.C. Cir. 1987).

[231] *See Reiter v. Cooper*, 507 U.S. 258, 268-269 (1993); *Allnet Comm. Servs. v. National Exchange Carrier Ass'n*, 965 F.2d 1118 (D.C. Cir. 1992); *see also* TCC Comments at 61.

[232] 47 U.S.C. § 252(e)(6) (emphasis added).

[233] *Id.* (emphasis added).

ruling where necessary to remove uncertainty or eliminate a controversy.[234] Because section 251 is critical to the development of competitive local markets, we intend to act expeditiously on such requests for declaratory rulings.

126. We further conclude that section 252(e)(6) does not divest the Commission of jurisdiction, in whole or in part, over complaints that a common carrier violated section 251 or 252 of the Act. Section 601(c)(1) of the 1996 Act provides that the 1996 Act "shall not be construed to modify, impair or supersede" existing federal law -- which includes the section 208 complaint process -- "unless expressly so provided."[235] Sections 251 and 252 do not divest the Commission of its section 208 complaint authority.

127. An aggrieved party could file a section 208 complaint with the Commission, alleging that the incumbent LEC or requesting carrier has failed to comply with the requirements of sections 251 and 252, including Commission rules thereunder, even if the carrier is in compliance with an agreement approved by the state commission. Alternatively, a party could file a section 208 complaint alleging that a common carrier is violating the terms of a negotiated or arbitrated agreement. We plan to initiate a proceeding to adopt expedited procedures for resolving complaints filed pursuant to section 208.

128. We note that, in acting on a section 208 complaint, we would not be directly reviewing the state commission's decision, but rather, our review would be strictly limited to determining whether the common carrier's actions or omissions were in contravention of the Communications Act.[236] Thus, consistent with our past decisions in analogous contexts,[237] we conclude that a person aggrieved by a state determination under sections 251 and 252 of the Act may elect to either bring an action for federal district court review or a section 208 complaint to the Commission against a common carrier. Such a person could, as a further alternative, pursuant to section 207, file a complaint against a common carrier with the

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[234] *See* 47 C.F.R. § 1.2 (the Commission, in accordance with section 5(d) of the Administrative Procedures Act, 5. U.S.C. § 554(e), may issue a declaratory ruling terminating a controversy or removing uncertainty).

[235] Telecommunications Act of 1996, § 601(c)(1).

[236] While we would have authority to review such complaints, we note that we might decline, at least in some instances, to impose financial penalties upon a common carrier that is acting pursuant to state requirements or authorization, even if we sustain the allegations in the complaint.

[237] *See Number Portability Order, supra*; *Freemon v. AT&T*, 9 FCC Rcd 4032, 4033 (1994) (provision permitting persons aggrieved by violation of prohibition against unauthorized publication of certain communications to "bring a civil action in United States district court or any other court of competent jurisdiction" did not bar a complaint under section 208 of the Communications Act); *see also Policies Governing the Provision of Shared Telecommunications Service*, 3 FCC Rcd 6931 (1988) (the section 208 complaint process is available to resolve any specific problems that might arise regarding shared telecommunications service regulation by a state that impinges upon a federal interest).

Commission or in federal district court for the recovery of damages.[238] We are unlikely, in adjudicating a complaint, to examine the consistency of a state decision with sections 251 and 252 if a judicial determination has already been made on the issues before us.[239]

129. Finally, we clarify, as one commenter requested,[240] that nothing in sections 251 and 252 or our implementing regulations is intended to limit the ability of persons to seek relief under the antitrust laws, other statutes, or common law. In addition, in appropriate circumstances, the Commission could institute an inquiry on its own motion, 47 U.S.C. § 403, initiate a forfeiture proceeding, 47 U.S.C. § 503(b), initiate a cease-and-desist proceeding, 47 U.S.C. § 312(b), or in extreme cases, consider initiating a revocation proceeding for violators with radio licenses, 47 U.S.C. § 312(a), or referring violations to the Department of Justice for possible criminal prosecution under 47 U.S.C. § 501, 502 & 503(a).

F. Regulations of BOC Statements of Generally Available Terms

130. We noted in the NPRM that section 251 and our implementing regulations govern the states' review of BOC statements of generally available terms and conditions,[241] as well as arrangements reached through compulsory arbitration pursuant to section 252(b).[242] We tentatively concluded that we should adopt a single set of standards with which both arbitrated agreements and BOC statements of generally available terms must comply.

131. Only a few commenters addressed this issue, and most concurred with the tentative conclusion that we should apply the same requirements to both arbitrated agreements and BOC statements of generally available terms.[243] The Illinois Commission, for example, asserts that, "[s]ince the generally available terms could be viewed as a baseline against which to craft arbitrated arrangements, it is reasonable to hold both arbitrated agreements and the

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[238] *See* 47 U.S.C. § 207.

[239] *Town of Deerfield v. FCC*, 992 F.2d 420, 428-430 (2d Cir. 1993).

[240] *See* MCI comments at 9.

[241] *See* 47 U.S.C. §§ 252(f) and 271(c)(2)(B).

[242] NPRM at para. 36 (*citing* 47 U.S.C. §§ 252(b), (f)).

[243] ACTA comments at 4; Arch comments at 5; BellSouth comments at 7; CompTel comments at 105; Illinois Commission comments at 14; MCI comments at 7; Sprint comments at 8.

BOC statements of generally available terms to the same standards."[244] CompTel asserts that, particularly if states require incumbent LECs to tariff the terms and conditions in agreements that are subject to arbitration, there will be few if any distinctions between arbitrated agreements and generally available terms and conditions.[245]

132. We hereby find that our tentative conclusion that we should apply a single set of standards to both arbitrated agreements and BOC statements of generally available terms is consistent with both the text and purpose of the 1996 Act. BOC statements of generally available terms are relevant where a BOC seeks to provide in-region interLATA service, and the BOC has not negotiated or arbitrated an agreement. Therefore, such statements are to some extent a substitute for an agreement for interconnection, services, or access to unbundled elements. We also find no basis in the statute for establishing different requirements for arbitrated agreements and BOC statements of generally available terms. Moreover, a single set of requirements will substantially ease the burdens of state commissions and the FCC in reviewing agreements and statements of generally available terms pursuant to sections 252 and 271.

G. States' Role in Fostering Local Competition Under Sections 251 and 252

133. As already referenced, states will play a critical role in promoting local competition, including by taking a key role in the negotiation and arbitration process. We believe the negotiation/arbitration process pursuant to section 252 is likely to proceed as follows. Initially, the requesting carrier and incumbent LEC will seek to negotiate mutually agreeable rates, terms, and conditions governing the competing carrier's interconnection to the incumbent's network, access to the incumbent's unbundled network elements, or the provision of services at wholesale rates for resale by the requesting carrier. Either party may ask the relevant state commission to mediate specific issues to facilitate an agreement during the negotiation process.

134. Because the new entrant's objective is to obtain the services and access to facilities from the incumbent that the entrant needs to compete in the incumbent's market, the negotiation process contemplated by the 1996 Act bears little resemblance to a typical commercial negotiation. Indeed, the entrant has nothing that the incumbent needs to compete with the entrant, and has little to offer the incumbent in a negotiation. Consequently, the 1996 Act provides that, if the parties fail to reach agreement on all issues, either party may seek arbitration before a state commission. The state commission will arbitrate individual issues specified by the parties, or conceivably may be asked to arbitrate the entire agreement.

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[244] Illinois Commission comments at 14.

[245] Comptel comments at 105.

In the event that a state commission must act as arbitrator, it will need to ensure that the arbitrated agreement is consistent with the Commission's rules. In reviewing arbitrated and negotiated agreements, the state commission may ensure that such agreements are consistent with applicable state requirements.

135. Under the statutory scheme in sections 251 and 252, state commissions may be asked by parties to define specific terms and conditions governing access to unbundled elements, interconnection, and resale of services beyond the rules the Commission establishes in this Report and Order. Moreover, the state commissions are responsible for setting specific rates in arbitrated proceedings. For example, state commissions in an arbitration would likely designate the terms and conditions by which the competing carrier receives access to the incumbent's loops. The state commission might arbitrate a description or definition of the loop, the term for which the carrier commits to the purchase of rights to exclusive use of a specific network element, and the provisions under which the competing carrier will order loops from the incumbent and the incumbent will provision an order. The state commission may establish procedures that govern should the incumbent refurbish or replace the element during the agreement period, and the procedures that apply should an end user customer decide to switch from the competing carrier back to the incumbent or a different provider. In addition, the state commission will establish the rates an incumbent charges for loops, perhaps with volume and term discounts specified, as well as rates that carriers may charge to end users.

136. State commissions will have similar responsibilities with respect to other unbundled network elements such as the switch, interoffice transport, signalling and databases. State commissions may identify network elements to be unbundled, in addition to those elements identified by the Commission, and may identify additional points at which incumbent LECs must provide interconnection, where technically feasible. State commissions are responsible for determining when virtual collocation may be provided instead of physical collocation, pursuant to section 251(c)(6). States also will determine, in accordance with section 251(f)(1), whether and to what extent a rural incumbent LEC is entitled to continued exemption from the requirements of section 251(c) after a telecommunications carrier has made a bona fide request under section 251. Under section 251(f)(2), states will determine whether to grant petitions that may be filed by certain LECs for suspension or modification of the requirements in sections 251(b) or (c).

137. The foregoing is a representative sampling of the role that states will have in steering the course of local competition. State commissions will make critical decisions concerning a host of issues involving rates, terms, and conditions of interconnection and unbundling arrangements, and exemption, suspension, or modification of the requirements in section 251. The actions taken by a state will significantly affect the development of local competition in that state. Moreover, actions in one state are likely to influence other states,

and to have a substantial impact on steps the FCC takes in developing a pro-competitive national policy framework.

III. DUTY TO NEGOTIATE IN GOOD FAITH

A. Background

138. Section 251(c)(1) of the statute imposes on incumbent LECs the "duty to negotiate in good faith in accordance with section 252 the particular terms and conditions of agreements to fulfill the duties described" in sections 251(b) and(c), and further provides that "(t)he requesting telecommunications carrier also has the duty to negotiate in good faith the terms and conditions of such agreements."[246] In the NPRM, we asked parties to comment on the extent to which the Commission should establish national rules defining the requirements of the good faith negotiation obligation.

B. Advantages and Disadvantages of National Rules

1. Comments

139. Some potential new entrants and other parties assert that clear national guidelines will prevent incumbent LECs from abusing their bargaining power for the purpose of undermining efforts to eliminate barriers to competition.[247] Some parties also assert that, in the absence of specific rules, negotiations between potential competitors are likely to be needlessly prolonged and contentious.[248] SBA claims that delay and other anticompetitive tactics are particularly burdensome on small businesses.[249] In addition, Independent Cable & Telecommunications Ass'n expresses concern that states might establish guidelines that favor the incumbent.[250] Other parties agree that national rules defining some limited aspects of good faith can simplify both negotiations and dispute resolution, but nevertheless contend that

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[246] 47 U.S.C. § 251(c)(1).

[247] *See, e.g.*, AT&T comments at 86-88; CEDRA comments at 1-9; TCC comments at 7-13.

[248] *See, e.g.*, ACSI comments at 7-11; AT&T comments at 86-88; Centennial Cellular Corp. comments at 2-10; Cox comments at 43-46; NCTA comments at 59-63.

[249] SBA comments at 8.

[250] Ind. Cable & Telecomm. Ass'n reply at 7.

the Commission should not establish extensive or detailed rules in this area, because the facts and tactics of various negotiations will display only a few characteristics in common.[251]

140. Some incumbent LECs and other parties contend that the FCC need not establish any rules regarding good faith negotiation, because the statute builds in a remedy of arbitration for parties that are dissatisfied with the negotiation process.[252] They maintain that national rules are inappropriate because a determination of whether a party has acted in good faith requires examination of specific facts that will not describe a pattern across the country.[253] SBC contends that national standards are inflexible, and thus will slow down the negotiation process, and that national rules are unnecessary, because the 1996 Act provides incentives for incumbents to negotiate.[254] Some parties also claim that section 252(b)(5) sets forth standards for good faith negotiation, and that provision makes no mention of a role for the FCC.[255]

2. Discussion

141. We conclude that establishing some national standards regarding the duty to negotiate in good faith could help to reduce areas of dispute and expedite fair and successful negotiations, and thereby realize Congress's goal of enabling swift market entry by new competitors. In order to address the balance of the incentives between the bargaining parties, however, we believe that we should set forth some minimum requirements of good faith negotiation that will guide parties and state commissions. As discussed above, the requirements in section 251 obligate incumbent LECs to provide interconnection to competitors that seek to reduce the incumbent's subscribership and weaken the incumbent's dominant position in the market. Generally, the new entrant has little to offer the incumbent. Thus, an incumbent LEC is likely to have scant, if any, economic incentive to reach agreement. In addition, incumbent LECs argue that requesting carriers may have incentives to

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[251] *See, e.g.*, Georgia Commission comments at 6; Pennsylvania Commission comments at 19-20; SBA comments at 9; Sprint comments at 10-11; Attorneys General reply at 12-13.

[252] BellSouth comments at 10-11; Texas Commission comments at 6-8; USTA comments at 8; *see also* District of Columbia Commission comments at 14-17.

[253] *See, e.g.*, Bell Atlantic comments at 47 (*citing Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation*, WT Docket 95-157, Notice of Proposed Rulemaking, FCC 96-196 (rel. Apr. 30. 1996)); Citizens Utilities comments at 6; Illinois Commission comments at 20-21; Ohio Commission comments at 21.

[254] SBC comments at 12-15.

[255] Citizens Utilities comments at 6; SBC comments at 7, 20.

make unreasonable demands or otherwise fail to act in good faith.[256] The fact that an incumbent LEC has superior bargaining power does not itself demonstrate a lack of good faith, or ensure that a new entrant will act in good faith.

142. We agree with commenters that it would be futile to try to determine in advance every possible action that might be inconsistent with the duty to negotiate in good faith. As discussed more fully below, determining whether or not a party's conduct is consistent with its statutory duty will depend largely on the specific facts of individual negotiations. Therefore, we believe that it is appropriate to identify factors or practices that may be evidence of failure to negotiate in good faith, but that will need to be considered in light of all relevant circumstances.

143. Consistent with our discussion in Section II, above, we believe that the Commission has authority to review complaints alleging violations of good faith negotiation pursuant to section 208.[257] Penalties may be imposed under sections 501, 502 and 503 for failure to negotiate in good faith. In addition, we believe that state commissions have authority, under section 252(b)(5), to consider allegations that a party has failed to negotiate in good faith. We also reserve the right to amend these rules in the future as we obtain more information regarding negotiations under section 252.

C. Specific Practices that May Constitute a Failure to Negotiate in Good Faith

1. Comments

144. The comments included numerous suggestions regarding what might constitute a violation of the duty to negotiate in good faith. Commenters disagree about whether requiring another party to sign a nondisclosure agreement constitutes failure to negotiate in good faith. Some parties urge the Commission to prohibit nondisclosure agreements altogether,[258] but other parties assert that there may be legitimate reasons to seek nondisclosure.[259] Some parties assert that the Commission should only prohibit overly broad or restrictive nondisclosure agreements, such as agreements that cover information that is not commercially sensitive, or

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[256] *See e.g.*, Bell Atlantic comments at 49; U S West comments at 40-42.

[257] We previously have held that parties may raise allegations regarding good faith negotiation pursuant to section 208. *Cellular Interconnection Proceeding*, 4 FCC Rcd 2369, 2371 (1989). The Commission also held in that case that "the conduct of good faith negotiations is not jurisdictionally severable." *Id.* at 2371.

[258] *See, e.g.*, LCI comments at 24; SBA comments at 9; TCI comments at 24.

[259] *See, e.g.*, Bell Atlantic comments at 48-49; GVNW comments at 3-4; Illinois Commission comments at 21; Sprint comments at 11-12; USTA comments at 8 n.11; U S West comments at 39-40.

that require withholding information from regulatory agencies.[260] Some potential competitors also propose that incumbents should not be permitted to refuse to negotiate until a requesting carrier signs a nondisclosure agreement.[261]

145. Commenters assert that other practices constitute a violation of the duty to negotiate in good faith. For example, most commenters on this issue agree that demands that a party limit its legal rights or remedies signal a lack of good faith.[262] Many new entrants also assert that actions that have the purpose or effect of delaying or impeding negotiations constitute failure to negotiate in good faith. For example, GST asserts parties should be required to respond within a reasonable time to a request to begin negotiations.[263] Some parties also claim that failing to respond to a proposal or participate meaningfully and with the intention of reaching agreement demonstrates a lack of good faith.[264] For instance, Time Warner contends that a party may not simply present proposals that do not include critical terms, or that it knows are unacceptable.[265] Parties also maintain that establishing preconditions, such as requiring requesting carriers to complete unnecessary forms before beginning negotiations, should be prohibited.[266]

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[260] *See, e.g.*, GST comments at 5; MFS comments at 10-14; TCC comments at 9 (very broad nondisclosure agreements puts the incumbent in a powerful position, because it has information about numerous companies and the competitor does not have access to that same information); Teleport comments at 5-10; Texas Commission comments at 6-8.

[261] *See, e.g.*, ACTA comments at 6-7; Arch comments at 9-10; ITIC comments at 7-8; NCTA comments at 59-63; Teleport comments at 5-10; *accord* Washington Commission comments at 12.

[262] *See, e.g.*, ACTA comments at 6-7; Illinois Commission comments at 21; SBA comments at 9; Sprint comments at 11; TCI comments at 24; Washington Commission comments at 12.

[263] GST comments at 5; *accord* ACSI comments at 7-11; Bell Atlantic comments at 49 (refusing to schedule negotiations after making a request demonstrates bad faith); MFS comments at 10-14; Time Warner comments at 22-23.

[264] MFS comments at 10-14; Time Warner comments at 22-23.

[265] Time Warner comments at 22.

[266] ALTS comments at 12; AT&T comments at 86-88; Cox comments at 45-46; Excel comments at 8-9; Intelcom comments at 3-13; ITIC comments at 7-8; MFS comments at 10-14; LCI comments at 23; NCTA comments at 59-60; Time Warner comments at 22; Washington Commission comments at 12; NTIA reply at 6 n.14.

146. New entrants argue that the failure of an incumbent LEC to provide information necessary to conduct meaningful negotiations constitutes a refusal to negotiate in good faith.[267] Incumbent LECs similarly assert that requesting carriers should be required to provide certain information necessary to respond to their requests. For example, U S West states that an incumbent should be able to require a carrier that seeks interconnection to disclose what it wants to obtain, where, when, and for what duration.[268] U S West contends that a requesting carrier should not be permitted to demand immediate unbundling or interconnection, thereby forcing the incumbent to incur costs, while refusing to provide a proposed purchase and deployment schedule. Some incumbent LECs advocate a "bona fide request" requirement for all interconnection requests.[269] Under such a requirement, a requesting carrier would have to: (1) certify that it will make use of the services or facilities it requests within a specified period from the date of the request; (2) describe the purpose of the request; (3) specify precisely what it was requesting; and (4) agree to purchase the requested services or facilities for a minimum time. Other parties specifically object to a "bona fide request" requirement. For example, LCI states that such a requirement would force a carrier to agree to purchase services or facilities before prices and other terms and conditions have been established.[270]

147. Other practices to which some commenters object include a refusal to negotiate any proposed term or condition, or conditioning negotiation on one issue upon first reaching agreement on another issue.[271] Time Warner contends, for example, that parties should not be permitted to require agreement on non-price terms before beginning to negotiate prices.[272] Time Warner also contends that it is a failure to negotiate in good faith to link negotiations under section 252 with negotiations between parties in another context. Some parties contend that it demonstrates a lack of good faith for a party to fail to appoint a representative in

[267] *See, e.g.*, ACSI comments at 7-11; AT&T comments at 86-88; Cox comments at 45-46; GST comments at 6-7; MFS comments at 10-14 (for example, incumbent LECs must provide detailed documentation to support claims that a request to unbundle an element is technically infeasible); TCC comments at 9 (incumbent LECs must provide cost studies that underlie proposed rates); Time Warner comments at 22.

[268] U S West comments at 40-42.

[269] *See, e.g.*, Cincinnati Bell comments at 8-9; GTE comments at 15-17; PacTel comments at 16-21; TDS comments at 5-6; Anchorage Tel. Utility reply at 6-7.

[270] LCI comments at 24; *accord* GCI reply at 3.

[271] ALTS comments at 12; AT&T comments at 86-88; BellSouth comments at 10-11; Time Warner comments at 22.

[272] Time Warner comments at 26.

negotiations that has authority to bind the party it represents,[273] or at least authority to enter into tentative agreements on behalf of such party,[274] and that such failure needlessly delays negotiations. SCBA asserts that delays caused by failing to appoint an appropriate representative are particularly burdensome on small cable operators, which lack the resources to endure protracted negotiations and arbitrations.[275]

2. Discussion

148. The Uniform Commercial Code defines "good faith" as "honesty in fact in the conduct of the transaction concerned."[276] When looking at good faith, the question "is a narrow one focused on the subjective intent with which the person in question has acted."[277] Even where there is no specific duty to negotiate in good faith, certain principles or standards of conduct have been held to apply.[278] For example, parties may not use duress or misrepresentation in negotiations.[279] Thus, the duty to negotiate in good faith, at a minimum, prevents parties from intentionally misleading or coercing parties into reaching an agreement they would not otherwise have made. We conclude that intentionally obstructing negotiations also would constitute a failure to negotiate in good faith, because it reflects a party's unwillingness to reach agreement.

149. Because section 252 permits parties to seek mediation "at any point in the negotiation,"[280] and also allows parties to seek arbitration as early as 135 days after an

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[273] AT&T comments at 86-88; CEDRA comments at 8.

[274] MFS comments at 10-14.

[275] SCBA comments at 10; *accord* Excel comments at 8-9; SBA comments at 8; Frontier reply at 6.

U.C.C. § 1-201(19) (1981); *see also* Black's Law Dictionary at 353 (Abridged ed. 1983) ("Good faith is an intangible and abstract quality with no technical meaning or statutory definition, and it encompasses, among other things, an honest belief, the absence of malice, and the absence of design to defraud or to seek an unconscionable advantage . . .").

[277] U.C.C. § 1-201 (84).

[278] Steven J. Burton and Eric G. Anderson, *Contractual Good Faith*, § 8.2.2 at 332 (1995).

[279] *Id.*, § 8.3.1 at 335-341.

[280] 47 U.S.C. § 252(a)(2).

incumbent LEC receives a request for negotiation under section 252,[281] we conclude that Congress specifically contemplated that one or more of the parties may fail to negotiate in good faith, and created at least one remedy in the arbitration process.[282] The possibility of arbitration itself will facilitate good faith negotiation. For example, parties seeking to avoid a legitimate accusation of breach of the duty of good faith in negotiation will work to provide their negotiating adversary all relevant information -- given that section 252(b)(4)(B) authorizes the state commission to require the parties "to provide such information as may be necessary for the State commission to reach a decision on the unresolved issues."[283] That provision also states that, if either party "fails unreasonably to respond on a timely basis to any reasonable request from the State commission, then the State commission may proceed on the basis of the best information available to it from whatever source derived."[284] The likelihood that an arbitrator will review the positions taken by the parties during negotiations also should discourage parties from refusing unreasonably to provide relevant information to each other or to delay negotiations.

150. We believe that determining whether a party has acted in good faith often will need to be decided on a case-by-case basis by state commissions or, in some instances the FCC, in light of all the facts and circumstances underlying the negotiations.[285] In light of these considerations, we set forth some minimum standards that will offer parties guidance in determining whether they are acting in good faith, but leave specific determinations of whether a party has acted in good faith to be decided by a state commission, court, or the FCC on a case-by-case basis.

151. We find that there may be pro-competitive reasons for parties to enter into nondisclosure agreements. A broad range of commenters, including IXCs, state commissions, and incumbent LECs, support this view. We conclude that there can be nondisclosure agreements that would not constitute a violation of the good faith negotiation duty, but we caution that overly broad, restrictive, or coercive nondisclosure requirements may well have

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[281] 47 U.S.C. § 252(b)(1).

[282] Section 252(b)(4)(C) requires state commissions to "conclude the resolution of any unresolved issues not later than 9 months after the date on which the local exchange carrier received the request under this section." 47 U.S.C. § 252(b)(4)(C).

[283] 47 U.S.C. § 252(b)(4)(B).

[284] *Id.*

[285] This is consistent with earlier Commission decisions. *See Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation*, WT Docket 95-157, First Report and Order, FCC 96-196, at para. 20 (rel. Apr. 30, 1996).

anticompetitive effects. We therefore will not prejudge whether a party has demonstrated a failure to negotiate in good faith by requesting another party to sign a nondisclosure agreement, or by failing to sign a nondisclosure agreement; such demands by incumbents, however, are of concern and any complaint alleging such tactics should be evaluated carefully. Agreements may not, however, preclude a party from providing information requested by the FCC, a state commission, or in support of a request for arbitration under section 252(b)(2)(B).

152. We reject the general contention that a request by a party that another party limit its legal remedies as part of a negotiated agreement will in all cases constitute a violation of the duty to negotiate in good faith. A party may voluntarily agree to limit its legal rights or remedies in order to obtain a valuable concession from another party. In some circumstances, however, a party may violate this statutory provision by demanding that another waive its legal rights. For example, we agree with ALTS' contention that an incumbent LEC may not demand that the requesting carrier attest that the agreement complies with all provisions of the 1996 Act, federal regulations, and state law,[286] because such a demand would be at odds with the provisions of sections 251 and 252 that are intended to foster opportunities for competition on a level playing field. In addition, we find that it is a *per se* failure to negotiate in good faith for a party to refuse to include in an agreement a provision that permits the agreement to be amended in the future to take into account changes in Commission or state rules. Refusing to permit a party to include such a provision would be tantamount to forcing a party to waive its legal rights in the future.

153. We decline to find that other practices identified by parties constitute *per se* violations of the duty to negotiate in good faith. Time Warner contends that we should find that a party is not negotiating in good faith under section 252 if it seeks to tie resolution of issues in that negotiation to the resolution of other, unrelated disputes between the parties in another proceeding. On its face, the hypothetical practice raises concerns. Time Warner, however, did not present specific examples of how linking two independent negotiation proceedings would undermine good faith negotiations. We believe that requesting carriers have certain rights under sections 251 and 252, and those rights may not be derogated by an incumbent LEC demanding *quid pro quo* concessions in another proceeding. Parties, however, could mutually agree to link section 252 negotiations to negotiations on a separate matter. In fact, to the extent that concurrent resolution of issues could offer more potential solutions or may equalize the bargaining power between the parties, such action may be pro-competitive.[287]

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[286] ALTS comments at Attachment A, ¶ 5.

[287] For example, an incumbent LEC that offers video programming may be negotiating for the right to use video programming owned by a cable company while the cable company is negotiating terms for interconnecting with the incumbent LEC. Addressing some or all of the issues in the two negotiations collectively could expand the options for reaching agreement, and would equalize the parties' bargaining power, because each has something that the other party desires.

154. We agree with parties contending that actions that are intended to delay negotiations or resolution of disputes are inconsistent with the statutory duty to negotiate in good faith.[288] The Commission will not condone any actions that are deliberately intended to delay competitive entry, in contravention of the statute's goals. We agree with SCBA that small entities seeking to enter the market may be particularly disadvantaged by delay. However, whether a party has failed to negotiate in good faith by employing unreasonable delaying tactics must be determined on a specific, case-by-case basis. For example, a party may not refuse to negotiate with a requesting telecommunications carrier, and a party may not condition negotiation on a carrier first obtaining state certification.[289] A determination based upon the intent of a party, however, is not susceptible to a standardized rule. If a party refuses throughout the negotiation process to designate a representative with authority to make binding representations on behalf of the party, and thereby significantly delays resolution of issues, such action would constitute failure to negotiate in good faith.[290] In particular, we believe that designating a representative authorized to make binding representations on behalf of a party will assist small entities and small incumbent LECs by centralizing communications and thereby facilitating the negotiation process.[291] On the other hand, it is unreasonable to expect an agent to have authority to bind the principal on every issue -- i.e., a person may reasonably be an agent of limited authority.

155. We agree with incumbent LECs and new entrants that contend that the parties should be required to provide information necessary to reach agreement.[292] Parties should provide information that will speed the provisioning process, and incumbent LECs must prove to the state commission, or in some instances the Commission or a court, that delay is not a

[288] *See United States v. American Tel. and Tel. Co.*, 524 F. Supp. 1336, 1356 and n.84 (D.D.C. 1981); *see also National Labor Relations Board v. Katz*, 369 U.S. 736, 742 (1962); *Amendment of Rules and Policies Governing the Attachment of Cable Television Hardware to Utility Poles*, 4 FCC Rcd 468, 472 (1989).

[289] *See, e.g.*, ALTS comments at 12-13 (contending that U S West has refused to start negotiations until it formed its positions regarding section 251, and that SBC has attempted to interpret and "enforce" state certification requirements).

[290] The Commission has reached a consistent conclusion in other instances. *See, e.g., Application of Gross Telecasting, Inc.*, 92 FCC 2d 250, 442 (1981); *Public Notice*, FCC Asks for Comments Regarding the Establishment of and Advisory Committee to Negotiate Proposed Regulations, 7 FCC Rcd 2370, 2372 (1992).

[291] For purposes of our analysis pursuant to the Regulatory Flexibility Act, 5 U.S.C. §§ 601 *et seq.*, our use of the terms "small entities" and "small businesses" does not encompass "small incumbent LECs." We use the term "small incumbent LECs" to refer to any incumbent LECs that arguably might be defined by the Small Business Administration as "small business concerns."

[292] *See National Labor Relations Board v. Truitt Mfg Co.*, 351 U.S. 149, 153 (1956) (the trier of fact can reasonably conclude that a party lacks good faith if it raises assertions about inability to pay without making the slightest effort to substantiate that claim); *see also Microwave Facilities Operating in 1850-1990 MHz (2GHz) Band*, 61 F.R. 29679, 29689 (1996).

motive in their conduct. Review of such requests, however, must be made on a case-by-case basis to determine whether the information requested is reasonable and necessary to resolving the issues at stake. It would be reasonable, for example, for a requesting carrier to seek and obtain cost data relevant to the negotiation, or information about the incumbent's network that is necessary to make a determination about which network elements to request to serve a particular customer.[293] It would not appear to be reasonable, however, for a carrier to demand proprietary information about the incumbent's network that is not necessary for such interconnection.[294] We conclude that an incumbent LEC may not deny a requesting carrier's reasonable request for cost data during the negotiation process, because we conclude that such information is necessary for the requesting carrier to determine whether the rates offered by the incumbent LEC are reasonable. We find that this is consistent with Congress's intention for parties to use the voluntary negotiation process, if possible, to reach agreements. On the other hand, the refusal of a new entrant to provide data about its own costs does not appear on its face to be unreasonable, because the negotiations are not about unbundling or leasing the new entrants' networks.

156. We also find that incumbent LECs may not require requesting carriers to satisfy a "bona fide request" process as part of their duty to negotiate in good faith. Some of the information that incumbent LECs propose to include in a bona fide request requirement may be legitimately demanded from the requesting carrier; some of the proposed requirements, on the other hand, exceed the scope of what is necessary for the parties to reach agreement, and imposing such requirements may discourage new entry. For example, parties advocate that a "bona fide request" requirement should require requesting carriers to commit to purchase services or facilities for a specified period of time. We believe that forcing carriers to make such a commitment before critical terms, such as price, have been resolved is likely to impede new entry. Moreover, we note that section 251(c) does not impose any bona fide request requirement. In contrast, section 251(f)(1) provides that a rural telephone company is exempt from the requirements of 251(c) until, among other things, it receives a "bona fide request" for interconnection, services, or network elements. This suggests that, if Congress had intended to impose a "bona fide request" requirement on requesting carriers as part of their duty to negotiate in good faith, Congress would have made that requirement explicit.

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[293] *See* discussion of technical feasibility, *infra*, Section IV. In addition, the Commission's federal advisory committee, the Network Reliability Council, has developed templates that summarize and list activities that need to occur when service providers connect their networks pursuant to defined interconnection specifications or when they are attempting to define a new network interface specification. As consensus recommendations from the Council, we presume the elements defined in the templates are "good faith" issues for negotiation. Comments of the Secretariat of the Second Network Reliability Council at 4-5 (*citing Network Reliability: The Path Forward*, (1996), Section 2, pp. 51-56).

[294] This is consistent with previous FCC determinations. *See, e.g., Amendment of Rules and Policies Governing the Attachment of Cable Television Hardware to Utility Poles*, 4 FCC Rcd 468, 472 (1989) (good faith negotiations necessitate that, at a minimum, one party must approach the other with a specific request).

D. Applicability of Section 252 to Preexisting Agreements

1. Background

157. Section 252(a)(1) provides that, "[u]pon receiving a request for interconnection, services, or network elements pursuant to section 251, an incumbent local exchange carrier may negotiate and enter into a binding agreement with the requesting telecommunications carrier or carriers without regard to the standards set forth in subsections (b) and (c) of section 251 . . . . The agreement, including any interconnection agreement negotiated before the date of enactment of the Telecommunications Act of 1996, shall be submitted to the State commission under subsection (e) of this section."[295]

158. In the NPRM, we sought comment on whether sections 252(a)(1) and 252(e) require parties that have negotiated agreements for interconnection, services or network elements prior to the passage of the 1996 Act to submit such agreements to state commissions for approval. We also asked whether one party to such an existing agreement could compel renegotiation and arbitration in accordance with the procedures set forth in section 252.

2. Comments

159. In general, potential local competitors that addressed this issue argue that the plain language of section 251(a)(1) requires such agreements to be filed with the appropriate state commission for review under section 252(e).[296] In addition, these parties assert that, pursuant to section 252(i), the terms of such agreements must be made available to other carriers.[297] These parties claim that filing such agreements also should be required as a matter of public policy, because they provide evidence of existing interconnection terms that may provide the baseline for other negotiations,[298] and ensure that incumbents are not favoring

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[295] 47 U.S.C. § 252(a)(1). Section 252(e) provides that "(a)ny interconnection agreement adopted by negotiation or arbitration shall be submitted for approval to the State commission." 47 U.S.C. § 252(e).

[296] *See, e.g.*, ALTS comments at 14-16; CompTel comments at 104; GST comments at 7; Jones Intercable comments at 22-23; Ohio Consumers' Counsel comments at 6; Sprint comments at 12; TCC comments at 9-10; *see also* Louisiana Commission comments at 8 (carriers must submit preexisting agreements upon request by the state commission).

[297] Section 252(i) provides that a LEC "shall make available any interconnection, service, or network element provided under an agreement approved under this section to which it is a party to any other requesting telecommunications carrier upon the same terms and conditions as those provided in the agreement." 47 U.S.C. § 252(i).

[298] AT&T comments at 88-90; Jones Intercable comments at 22-23.

some carriers over others.[299] Parties also claim that preexisting agreements will provide useful information to the states,[300] and that states should have the ability to review preexisting agreements to ensure that they comply with the 1996 Act.[301]

160. Incumbent LECs allege that the statute does not require that preexisting agreements be filed with state commissions. They contend that Congress only intended parties to file agreements negotiated pursuant to section 251.[302] These parties point out that section 252(a) specifically refers to requests for interconnection, services, or network elements "pursuant to section 251," and contend that an agreement reached prior to the enactment of the 1996 Act, by definition, could not have been negotiated pursuant to section 251.[303] Several parties suggest that the 1996 Act only requires filing of preexisting agreements that have been amended subsequent to the enactment of the 1996 Act, or that have been incorporated by reference into agreements negotiated pursuant to section 251.[304] Some commenters also contend that, as a policy matter, there is no reason to require filing of preexisting agreements. The California Commission asserts that requiring filing and review of preexisting agreements would be burdensome for states, and is unnecessary, because many states already reviewed such agreements prior to the passage of the 1996 Act.[305]

161. A related question is whether there should be a distinction between preexisting interconnection agreements between competitors within the same service area and agreements between non-competing or neighboring LECs. Several parties contend that the 1996 Act does not exempt such agreements from the filing requirement.[306] They also claim that it may be

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[299] ALTS comments at 14-16, reply at 39-41.

[300] *See, e.g.*, AT&T comments at 88-90.

[301] *See, e.g.*, Arch comments at 9-10; Time Warner comments at 25.

[302] *See, e.g.*, BellSouth comments at 10-11; Cincinnati Bell comments at 9-10; Home Tel. comments at 2; J. Staurulakis comments at 3; F. Williamson comments at 5.

[303] *See, e.g.*, Ameritech comments at 95-96; BellSouth comments at 10-11; NYNEX reply at 15-16 (section 251(i) also applies only to agreements approved under section 252).

[304] *See, e.g.*, Ameritech comments at 95-96; BellSouth comments at 10-11.

[305] California Commission comments at 33.

[306] *See, e.g.*, Colorado Commission comments at 50; MFS comments at 66; Michigan Commission Staff comments at 20; Ohio Consumers' Counsel comments at 34; Oregon Commission comments at 33; ALTS reply at 35; Cox reply at 38-39; WinStar reply at 18-19.

difficult to monitor whether parties are competing, and that, in light of the 1996 Act, parties that did not compete in the past may do so in the future.[307] ACTA asserts that such agreements will provide the best information available on technically, economically and operationally feasible interconnection arrangements, because these agreements were reached in a noncompetitive context, where the incumbent was not striving to protect its market from competition, and therefore, as a public policy matter, they should be publicly filed.[308] ALTS states that Wisconsin and other states have already addressed this issue and reached the same conclusion.[309]

162. Incumbent LECs argue that Congress did not contemplate that agreements between non-competing LECs would be used as models for agreements between competitors,[310] and that such agreements bear no relation to competitive interconnection agreements.[311] Some parties argue that requiring preexisting agreements between noncompeting LECs would jeopardize universal service in many areas, especially where extended area service arrangements are in place.[312] NYNEX and the Rural Telephone Coalition contend that agreements between neighboring LECs fall within the provisions of section 259, which give rural LECs that lack economies of scope or scale the right to obtain or continue "infrastructure sharing" with neighboring larger LECs.[313]

163. Several parties recommend that agreements reached before enactment of the 1996 Act should be subject to a period of renegotiation.[314] For example, Sprint contends that

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[307] *See, e.g.*, MFS comments at 67; Oregon Commission comments at 34; ALTS reply at 36; Cox reply at 39.

[308] ACTA comments at 6-8; *accord* Cox reply at 38; WinStar reply at 19.

[309] ALTS reply at 35-36. *See, e.g., Investigation of the Implementation of the Federal Telecommunications Act of 1996 in Wisconsin*, 05-TI-140 (Wisconsin Commission May 17, 1996); *In re Negotiated Interconnection Agreements of Telecommunications Carriers*, Docket No. 96-098-U (Arkansas Commission rel. Apr. 1, 1996).

[310] *See, e.g.*, NYNEX comments at 27 (*citing* Joint Explanatory Statement at 117, 120; Cong. Rec. S7893 (daily ed. June 7, 1995) (statement of Sen. Pressler)); Rural Tel. Coalition comments at 16; SBC comments at 53; USTA comments at 68-69.

[311] Cincinnati Bell comments at 9-10; MECA comments at 20-21; Texas Statewide Telephone Cooperative, Inc. reply at 8-9; U S West reply at 29-30.

[312] Home Tel. comments at 2; J. Staurulakis comments at 3; *see also* USTA comments at 69.

[313] NYNEX reply at 15; Rural Tel. Coalition reply at 12.

[314] Intermedia comments at 16; LCI comments at 24-26; Sprint comments at 12-13, reply at 13-14.

the passage of the 1996 Act constitutes a "changed circumstance" that would justify renegotiation of preexisting agreements.[315] Sprint proposes that parties should be required to file preexisting agreements with the state commission, but that parties should be given a six-month period to renegotiate before the terms of such agreements are made available to others under section 252(i). Intermedia Communications advocates that parties that signed long-term contracts with incumbent LECs before additional rights and competitive alternatives were available under the 1996 Act should be permitted to terminate those agreements, with minimal liability, for a period of six months after such competitive alternatives become available.[316] GST advocates that only non-incumbent LECs that are parties to an agreement should have the right to renegotiate contracts.[317] The Texas Commission states that parties should be permitted to renegotiate in the event that the state determines that the preexisting agreement violates section 252.[318]

164. Some parties contend that there is no basis for renegotiation of preexisting contracts.[319] The Illinois Commission maintains that parties have a legal obligation to abide by the terms of their contracts, and the 1996 Act does not affect that obligation.[320] It claims that a unilateral right to abrogate existing contracts could undo progress that has already been made to foster local competition. The Illinois Commerce Commission notes that parties may mutually agree to amend existing contracts, and that a party that already has an agreement with an incumbent may request a new agreement under section 252(i) if the interconnection, services, or access to unbundled elements it seeks are different from those encompassed in the existing agreement. Pacific Telesis asserts that requiring renegotiation and arbitration of existing agreements would waste resources and interfere with parties' settled expectations.[321]

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[315] Sprint comments at 12 (pre-Act agreements were entered into under a different regulatory scheme, and without contemplation by the parties that the local market might become competitive; in addition, such contracts might be inconsistent with section 251, and states should not expend resources reviewing them); *accord* Time Warner comments at 26 (the Commission should establish "fresh look" period as it has done in other cases involving changed circumstances).

[316] Intermedia comments at 16; *accord* LCI comments at 24-26.

[317] GST comments at 7.

[318] Texas Commission comments at 7-8.

[319] *See, e.g.*, Illinois Commission comments at 23-24; Louisiana Commission comments at 8; F. Williamson comments at 5.

[320] Illinois Commission comments at 23-24.

[321] PacTel comments at 21.

3. Discussion

165. We conclude that the 1996 Act requires all interconnection agreements, "including any interconnection agreement negotiated before the date of enactment of the Telecommunications Act of 1996," to be submitted to the state commission for approval pursuant to section 252(e).[322] The 1996 Act does not exempt certain categories of agreements from this requirement. When Congress sought to exclude preexisting contracts from provisions of the new law, it did so expressly. For example, section 276(b)(3) provides that "nothing in this section shall affect any existing contracts between location providers and payphone service providers or interLATA or intraLATA carriers that are in force and effect as of the date of enactment of the Telecommunications Act of 1996."[323] Nothing in the legislative history leads us to a contrary conclusion. Congress intended, in enacting sections 251 and 252, to create opportunities for local telephone competition. We believe that this pro-competitive goal is best effected by subjecting all agreements to state commission review.

166. The first sentence in section 252(a)(1) refers to requests for interconnection "pursuant to section 251."[324] The final sentence in section 252(a)(1) requires submission to the state commission of all negotiated agreements, including those negotiated *before* the enactment of the 1996 Act. Some parties have asserted that there is a tension between those two sentences. We conclude that the final sentence of section 252(a)(1), which requires that *any* interconnection agreement must be submitted to the state commission, can and should be read to be independent of the prior sentences in section 252(a)(1). The interpretation suggested by some commenters that preexisting contracts need only be filed if they are amended subsequent to the 1996 Act, or incorporated by reference into agreements negotiated pursuant to the 1996 Act, would force us to impose conditions that were not intended by Congress.

167. As a matter of policy, moreover, we believe that requiring filing of all interconnection agreements best promotes Congress's stated goals of opening up local markets to competition, and permitting interconnection on just, reasonable, and nondiscriminatory terms. State commissions should have the opportunity to review *all* agreements, including those that were negotiated before the new law was enacted, to ensure that such agreements do not discriminate against third parties, and are not contrary to the public interest. In particular, preexisting agreements may include provisions that violate or are inconsistent with the pro-

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[322] 47 U.S.C. § 252(a).

[323] 47 U.S.C. § 276(b)(3) (addressing nondiscrimination safeguards and regulations regarding payphone service).

[324] 47 U.S.C. § 252(a)(1).

competitive goals of the 1996 Act, and states may elect to reject such agreements under section 252(e)(2)(A). Requiring all contracts to be filed also limits an incumbent LEC's ability to discriminate among carriers, for at least two reasons. First, requiring public filing of agreements enables carriers to have information about rates, terms, and conditions that an incumbent LEC makes available to others. Second, any interconnection, service or network element provided under an agreement approved by the state commission under section 252 must be made available to any other requesting telecommunications carrier upon the same terms and conditions, in accordance with section 252(i).[325] In addition, we believe that having the opportunity to review existing agreements may provide state commissions and potential competitors with a starting point for determining what is "technically feasible" for interconnection.[326]

168. Conversely, excluding certain agreements from public disclosure could have anticompetitive consequences. For example, such contracts could include agreements not to compete. In addition, if we exempt agreements between neighboring non-competing LECs, those parties might have a disincentive to compete with each other in the future, in order to preserve the terms of their preexisting agreements. Such a result runs counter to the goal of the 1996 Act to encourage local service competition. Moreover, preserving such "non-competing" agreements could effectively insulate those parties from competition by new entrants. For example, if a new entrant seeking to provide competitive local service in a rural community is unable to obtain from a neighboring BOC interconnection or transport and termination on terms that are as favorable as those the BOC offers to the incumbent LEC in the rural area, the new entrant cannot effectively compete.[327] This is because the new entrant will have to charge its subscribers higher rates than the incumbent LEC charges to place calls to subscribers of the neighboring BOC.

[325] *See infra*, Section XV.B.

[326] *See, e.g.*, 47 U.S.C. §§ 251(c)(2)(B) and 251(c)(3).

[327] This analysis does not address the separate question of whether an incumbent LEC in a rural area must offer interconnection, resale services, or unbundled network elements. As discussed *infra*, Section XII, Congress provided rural carriers with an exemption from section 251(c) requirements until the state commission removes such exemption. 47 U.S.C. § 251(f)(1).

169. We find that section 259 does not compel us to reach a different conclusion regarding the application of section 252 to agreements between neighboring LECs.[328] Section 259 is limited to agreements for infrastructure sharing between incumbent LECs and telecommunications carriers that lack "economies of scale or scope," as determined in accordance with regulations prescribed by the Commission.[329] We conclude that the purpose and scope of section 259 differ significantly from the purpose and scope of section 251.[330] Section 259 is a limited and discrete provision designed to bring the benefits of advanced infrastructure to additional subscribers, in the context of the pro-competitive goals and provisions of the 1996 Act. Moreover, section 259(b)(7) requires LECs to file with the Commission or the state "any tariffs, contracts or other arrangements showing the rates, terms, and conditions under which such carrier is making available public switched network infrastructure and functions under this section."[331] We believe that this language further supports our conclusion that Congress intended agreements between neighboring LECs to be filed and available for public inspection. Commenters also have failed to persuade us that universal service is jeopardized by our finding that agreements between neighboring LECs are subject to section 252 filing and review provisions. Concerns regarding universal service should be addressed by the Federal-State Joint Board, empaneled pursuant to section 254 of the 1996 Act.[332] The Joint Board has initiated a comprehensive review of universal service issues and is considering, among other matters, access to telecommunications and information services in rural and high cost areas.[333] In addition, as discussed in Section XII, *infra*, the 1996 Act provides for exemptions, suspension, or modification of some of the requirements in section 251 for rural or smaller carriers.

[328] Section 259 requires the Commission to prescribe, within one year after the date of enactment of the 1996 Act, regulations that require incumbent LECs "to make available to any qualifying carrier such public switched network infrastructure, technology, information, and telecommunications facilities and functions as may be requested by such qualifying carrier to provide telecommunications services, or to provide access to information services . . . " 47 U.S.C. § 259(a). A "qualifying carrier" is a telecommunications carrier that "lacks economies of scale or scope," and that offers telephone exchange service, exchange access, and any other service included in universal service to all consumers in the service area without preference. 47 U.S.C. § 259(d).

[329] 47 U.S.C. § 259(d)(1).

[330] The Commission plans to initiate a proceeding to establish regulations pursuant to section 259.

[331] 47 U.S.C. § 259(b)(7).

[332] *Universal Service NPRM, supra.*

[333] *See*,47 U.S.C. § 251(f).

170. Some parties have suggested that we provide parties an opportunity to renegotiate preexisting contracts. Parties, of course, may mutually agree to renegotiate agreements, but we decline to mandate that parties renegotiate existing contracts. In addition, as discussed below, commercial mobile radio service (CMRS) providers that are party to preexisting agreements with incumbent LECs that provide for non-mutual compensation have the option of renegotiating such agreements with no termination liabilities or contract penalties.[334] We believe that generally requiring renegotiation of preexisting contracts is unnecessary, however, because state commissions will review preexisting agreements, and may reject any negotiated agreement that "discriminates against a telecommunications carrier not a party to the agreement," or that "is not consistent with the public interest, convenience, and necessity."[335] We recognize that preexisting agreements were negotiated under very different circumstances, and may not provide a reasonable basis for interconnection agreements under the 1996 Act. For example, non-competing neighboring LECs may have negotiated terms that simply are not viable in a competitive market. It would not foster efficient long-term competition to force parties to make available to all requesting carriers interconnection on terms not sustainable in a competitive environment. In such circumstances, a state commission would have authority to reject a preexisting agreement as inconsistent with the public interest. If a state commission approves a preexisting agreement, that agreement will be available to other parties in accordance with section 252(i). Contrary to NYNEX's assertion, once a state approves an agreement under section 252(e), that agreement is "approved under" section 252.

171. We decline to require immediate filing of pre-existing agreements. States should establish procedures and reasonable time frames for requiring filing of preexisting agreements in a timely manner. We leave these procedures largely in the hands of the states in order to ensure that we do not impair some states' ability to carry out their other duties under the 1996 Act, especially if a large number of such agreements must be filed and approved by the state commission. We believe, nevertheless, that we should set an outer time period to file with the appropriate state commission agreements that Class A carriers have with other Class A carriers that pre-date the 1996 Act.[336] We conclude that setting such a time limit will ensure that third parties are not prevented indefinitely from reviewing and taking advantage of the terms of preexisting agreements. We are concerned, however, about the burden that a national filing deadline might impose on small telephone companies that have preexisting

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[334] *See infra*, Section XI.A.

[335] 47 U.S.C. § 252(e)(2)(A).

[336] Class A companies are defined as companies "having annual revenues from regulated telecommunications operations of $100,000,000 or more." 47 C.F.R. § 32.11(a)(1).

agreements with Class A carriers or with other small carriers.[337] We therefore limit the filing deadline requirement to preexisting agreements between Class A carriers. We encourage all carriers to file preexisting contracts with the appropriate state commission no later than June 30, 1997, but impose this as a *requirement* only with respect to agreements between Class A carriers. We find that requiring preexisting agreements between Class A carriers to be filed no later than June 30, 1997 is unlikely to burden state commissions unduly, and will give parties a reasonable opportunity to renegotiate agreements if they so choose, while at the same time, establishing this outer time limit ensures that third parties will have access to the terms of such agreements, under section 252(i), within a reasonable period. We expect to have completed proceedings on universal service and access charges by this filing deadline. States may impose a shorter time period for filing preexisting agreements.

[337] *See* Regulatory Flexibility Act, 5 U.S.C. §§ 601 *et seq.*

IV. INTERCONNECTION

172. This section of the Report and Order, and the three sections that follow it, address the interconnection and unbundling obligations that the Act imposes on incumbent LECs. Beyond the resale of incumbent LEC services, it is these obligations that pave the way for the introduction of facilities-based competition with incumbent LECs. The interconnection obligation of section 251(c)(2), discussed in this section, allows competing carriers to choose the most efficient points at which to exchange traffic with incumbent LECs, thereby lowering the competing carriers' costs of, among other things, transport and termination of traffic. The unbundling obligation of section 251(c)(3) further permits new entrants, where economically efficient, to substitute incumbent LEC facilities for some or all of the facilities the new entrant would have had to obtain in order to compete. Finally, both the interconnection and unbundling sections of the Act, in combination with the collocation obligation imposed on incumbents by section 251(c)(6), allow competing carriers to choose technically feasible methods of achieving interconnection or access to unbundled elements.

173. Section 251(c)(2) imposes upon incumbent LECs "the duty to provide, for the facilities and equipment of any requesting telecommunications carrier, interconnection with the local exchange carrier's network . . . for the transmission and routing of telephone exchange service and exchange access."[338] Such interconnection must be: (1) provided by the incumbent LEC at "any technically feasible point within [its] network;"[339] (2) "at least equal in quality to that provided by the local exchange carrier to itself or . . . [to] any other party to which the carrier provides interconnection;"[340] and (3) provided on rates, terms, and conditions that are "just, reasonable, and nondiscriminatory, in accordance with the terms and conditions of the agreement and the requirements of this section and section 252."[341]

A. Relationship Between Interconnection and Transport and Termination

1. Background

174. In the NPRM, we sought comment on the relationship between the obligation of incumbent LECs to provide "interconnection" under section 251(c)(2) and the obligation of all LECs to establish reciprocal compensation arrangements for the "transport and termination" of

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[338] 47 U.S.C. § 251(c)(2)(A).

[339] 47 U.S.C. § 251(c)(2)(B).

[340] 47 U.S.C. § 251(c)(2)(C).

[341] 47 U.S.C. § 251(c)(2)(D).

telecommunications pursuant to section 251(b)(5). We stated that the term "interconnection" might refer only to the physical linking of two networks or to both the linking of facilities and the transport and termination of traffic. We noted in the NPRM that section 252(d) sets forth different pricing standards for interconnection and transport and termination.

2. Comments

175. The BOCs, several state commissions, and other parties argue that a plain reading of section 251(c)(2) requires a determination that interconnection refers only to the physical linking of facilities.[342] In contrast, the IXCs and several other parties claim that interconnection includes both the physical connection of the facilities and the transmission and termination of traffic across that link.[343] CompTel contends that it would make no sense for Congress to require an incumbent LEC to engage in a physical linking with another network without requiring the incumbent LEC to route and terminate traffic from the other network.[344] Several parties claim that there is no inherent contradiction between the pricing standard in section 252(d)(1) for interconnection[345] and section 252(d)(2) for transport and termination[346] because, to the extent that section 252(d)(2) allows for the mutual and reciprocal recovery of each carrier's costs, the recovery could be interpreted to mean total service long run

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[342] *See, e.g.*, Bell Atlantic comments at 20-21; BellSouth comments at 15; USTA comments at 9-10 (no useful purpose served by introducing ambiguity into the pricing standards that apply to the separate provisions); U S West comments at 11-12; GTE comments at 17-18 (interconnection denotes links between an incumbent LEC's network and a competitor's network while transport and termination refers to the transmission of a call from the point of interconnection to the called party); Florida Commission comments at 13; Illinois Commission comments at 29; New York Commission comments at 31; MFS comments at 15; Sprint comments at 13.

[343] *See, e.g.*, CompTel comments at 66-67; LDDS comments at 76; Texas Commission comments at 10; ACSI comments at 11.

[344] CompTel comments at 66-67.

[345] Section 252(d)(1) states that determinations by a state commission of the just and reasonable rate for interconnection pursuant to section 251(c)(2) and network elements pursuant to section 251(c)(3) shall be: (1) based on the cost determined without reference to a rate-of-return proceeding; (2) nondiscriminatory; and (3) may include a reasonable profit. 47 U.S.C. § 252(d)(1).

[346] Section 252(d)(2) states that, in connection with an incumbent LEC's compliance with section 251(b)(5), a state commission shall not consider the terms and conditions for reciprocal compensation to be just and reasonable unless: (1) the terms and conditions provide for mutual and reciprocal recovery of costs associated with the transport and termination of calls that originate on the network of another carrier; and, (2) such terms and conditions are a reasonable approximation of the additional costs of terminating such calls. Section 252(d)(2) explicitly states that bill-and-keep arrangements are not precluded under section 252(d)(2) and neither the Commission nor the states are authorized to establish rate regulation proceedings to establish the additional costs of transporting or terminating calls, or to require carriers to maintain records with respect to the additional costs of such calls. 47 U.S.C. § 252(d)(2).

incremental cost (TSLRIC) (including a reasonable profit) plus a reasonable contribution to joint and common costs, which is consistent with section 252(d)(1).[347]

3. Discussion

176. We conclude that the term "interconnection" under section 251(c)(2) refers only to the physical linking of two networks for the mutual exchange of traffic. Including the transport and termination of traffic within the meaning of section 251(c)(2) would result in reading out of the statute the duty of all LECs to establish "reciprocal compensation arrangements for the transport and termination of telecommunications," under section 251(b)(5).[348] In addition, in setting the pricing standard for section 251(c)(2) interconnection, section 252(d)(1) states it applies when state commissions make determinations "of the just and reasonable rate for interconnection of *facilities and equipment* for purposes of subsection (c)(2) of section 251."[349] Because section 251(d)(1) states that it only applies to the interconnection of "facilities and equipment," if we were to interpret section 251(c)(2) to refer to transport and termination of traffic as well as the physical linking of equipment and facilities, it would still be necessary to find a pricing standard for the transport and termination of traffic apart from section 252(d)(1). We also reject CompTel's argument that reading section 251(c)(2) to refer only to the physical linking of networks implies that incumbent LECs would not have a duty to route and terminate traffic. That duty applies to all LECs and is clearly expressed in section 251(b)(5). We note that because interconnection refers to the physical linking of two networks, and not the transport and termination of traffic, access charges are not affected by our rules implementing section 251(c)(2).

B. National Interconnection Rules

1. Background

177. In the NPRM, we tentatively concluded that national interconnection rules would facilitate swift entry by competitors in multiple states by eliminating the need to comply with a multiplicity of state variations in technical and procedural requirements.[350] We sought comment on this tentative conclusion.

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[347] ACSI comments at 11; Texas Public Utility Counsel comments at 1, 50; Texas Commission comments at 10.

[348] 47 U.S.C. § 251(b)(5).

[349] 47 U.S.C. § 251(d)(1) (emphasis added).

[350] NPRM at paras. 50-51.

2. Comments

178. Parties raise many of the same arguments discussed above, in section II.A., regarding the advantages and disadvantages of explicit national rules for interconnection. IXCs, CAPs, cable operators, and others claim that national rules could prevent incumbent LECs from erecting artificial barriers to entry,[351] facilitate comprehensive business and network planning,[352] equalize bargaining power,[353] and expedite and simplify negotiations.[354] Other parties, including several BOCs and state commissions, argue that national rules should only be established for core requirements and should allow for state variations.[355] Some parties contend, for example, that the pace of technological change makes it impossible to create immutable and uniform interconnection rules.[356] SBC and PacTel claim that industry standards already exist for interconnection and that national standards would preclude the deployment of new technologies.[357] PacTel also claims that Commission rules requiring untested interconnection methodologies may slow competitive entry.[358]

3. Discussion

179. As discussed more fully above, we conclude that national rules regarding interconnection pursuant to section 251(c)(2) are necessary to further Congress's goal of creating conditions that will facilitate the development of competition in the telephone

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[351] *See* MFS comments at 14; Teleport comments at 22; CompTel comments at 21; Ad Hoc Telecommunications Users Committee comments at 5; ACTA comments at 10; ACSI comments at 10; MCI reply at 24.

[352] *See* ACTA comments at 10; Vanguard comments at 10; Omnipoint comments at 17-18; NTIA reply at 3.

[353] *See* Teleport comments at 17; Kansas Commission comments at 5; AT&T reply at 9; MCI reply at 24; Time Warner reply at 6-7.

[354] *See* Intermedia comments at 3; Teleport reply at 8.

[355] *See, e.g.*, Ameritech comments at 11; BellSouth comments at 13-14; Bell Atlantic reply at 6-7; GTE reply at 9; Lincoln Tel. comments at 3; California Commission comments at 16; Illinois Commission comments at 25; New York Commission comments at 33; Texas Commission comments at 8; TCA comments at 4; Texas Tel. Ass'n comments at 1; F. Williamson comments at 7.

[356] *See* Ad Hoc Telecommunications Users Committee comments at 2; Citizens Utilities comments at 6-7; Rural Tel. Coalition comments at 31; Pennsylvania Commission reply at 23.

[357] SBC comments at 33; PacTel comments at 24, 28.

[358] PacTel comments at 23-24.

exchange market.[359] Uniform rules will permit all carriers, including small entities and small incumbent LECs, to plan regional or national networks using the same interconnection points in similar networks nationwide. Uniform rules will also guarantee consistent, minimum nondiscrimination safeguards and "equal in quality" standards in every state. Such rules will also avoid relitigating, in multiple states, the issue of whether interconnection at a particular point is technically feasible.

180. We believe, however, that inflexible or overly detailed national rules implementing section 251(c)(2) may inhibit the ability of the states or the parties to reach arrangements that reflect technological and market advances and regional differences. We also believe that, on several issues, the record is not adequate at this time to justify the establishment of national rules. Therefore, as required by section 251(d)(3) and as discussed in section II.C. above, our rules will permit states to go beyond the national rules discussed below, and impose additional procompetitive interconnection requirements, as long as such requirements are otherwise consistent with the 1996 Act and the Commission's regulations. We believe that we can benefit from state experience in our ongoing review of these issues.

C. Interconnection for the Transmission and Routing of Telephone Exchange Service and Exchange Access

1. Background

181. Section 251(c)(2) imposes a duty upon incumbent LECs to provide "interconnection with the [LEC's] network . . . for the transmission and routing of telephone exchange service and exchange access."[360] In the NPRM, we sought comment on whether a carrier could request interconnection pursuant to subsection (c)(2) for purposes of transmitting and routing telephone exchange service, exchange access, or both, or whether this provision requires that such a request be solely for purposes of providing *both* telephone exchange service and exchange access.[361]

2. Comments

182. The BOCs and several other parties state that a telecommunications carrier should not be able to request cost-based interconnection under section 251(c)(2) solely for the purpose of offering access services. They argue that a carrier requesting interconnection

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[359] *See supra*, Section II.A.

[360] 47 U.S.C. § 251(c)(2).

[361] NPRM at para. 162.

solely under section 251(c)(2) must use that interconnection for the transmission and routing of both telephone exchange service *and* exchange access.[362] USTA concurs, and suggests that competitive access providers (CAPs) will not be harmed because, if CAPs wish to provide only exchange access, they are fully protected by the Commission's *Expanded Interconnection* rules.[363]

183. IXCs and the DOJ argue that carriers should be able to request cost-based interconnection under section 251(c)(2) solely for the purpose of offering access services. The IXCs claim that, in view of congressional intent not to limit entry into the local telecommunications market, the statute should be read to permit telecommunications carriers to provide either local exchange service, exchange access, or both.[364] DOJ and CompTel contend that permitting the use of section 251(c)(2) interconnection to provide competitive exchange access is not inconsistent with section 251(g)[365] because section 251(g) only preserves the rights of IXCs to equal access under the Commission's preexisting rules until such time that the Commission adopts new requirements. They argue that section 251(g) was not intended to limit the provision of exchange access by new entrants.[366] AT&T argues that, by requiring incumbent LECs to provide interconnection for the transmission and routing of telephone exchange access, Congress used the word "and" to make clear that incumbent LECs must make interconnection available for purposes of allowing new entrants to provide local exchange *and* exchange access, and thereby prevent incumbent LECs from claiming that, as long as they offered interconnection for at least one of these two purposes, they had met the requirement in section 251(c)(2).[367]

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[362] *See, e.g.*, USTA comments at 62-64 (requiring both is in keeping with the Act's purpose of encouraging facilities-based competition); Ameritech comments at 17-19 (nothing in the Act or the legislative history indicates that Congress was concerned about exchange access service per se); Bell Atlantic comments at 8; BellSouth comments at 61; GTE comments at 75; Ohio Consumers' Counsel comments at 32.

[363] USTA comments at 65.

[364] *See, e.g.*, CompTel reply at 26, 33; AT&T reply at 24 n.40; Sprint comments at 68 n.38; DoJ comments at 44, 52; PageNet comments at 15-16 (the word "and" in the context of legislative history can be read alternatively as "and" or "or", depending on congressional intent).

[365] Section 251(g) states that each LEC "shall provide exchange access, information access, and exchange services for such access to [IXCs] and information service providers in accordance with the same equal access and nondiscriminatory interconnection restrictions and obligations (including receipt of compensation)" that apply prior to enactment of the 1996 Act. Section 251(g) also states that these rules shall remain in effect until the Commission "explicitly supersede[s]" them. 47 U.S.C. § 251(g).

[366] DoJ comments at 53 n.26; CompTel reply at 28.

[367] AT&T reply at 24 n.40.

3. Discussion

184. We conclude that the phrase "telephone exchange service and exchange access" imposes at least three obligations on incumbent LECs: an incumbent must provide interconnection for purposes of transmitting and routing telephone exchange traffic or exchange access traffic or both. We believe that this interpretation is consistent with both the language of the statute and Congress's intent to foster entry by competitive providers into the local exchange market.[368] Moreover, the term "local exchange carrier" is defined in the Act as "any person that is engaged in the provision of telephone exchange service *or* exchange access."[369] Thus, we believe that Congress intended to facilitate entry by carriers offering either service. In imposing an interconnection requirement under section 251(c)(2) to facilitate such entry, however, we believe that Congress did not want to deter entry by entities that seek to offer either service, or both, and, as a result, section 251(c)(2) requires incumbent LECs to interconnect with carriers providing "telephone exchange service *and* exchange access."[370] Congress made clear that incumbent LECs must provide interconnection to carriers that seek to offer telephone exchange service *and* to carriers that seek to offer exchange access. This interpretation is consistent with section 251(c)(2), which imposes an obligation on incumbent LECs, but not requesting carriers.[371] Thus, for example, an analogous requirement might be that incumbent LECs must provide interconnection for the transmission and routing of "electrical and optical signals." Such a hypothetical requirement could not rationally be read to obligate *requesting carriers* to provide both electrical and optical signals.[372]

185. We also conclude that requiring new entrants to make available both local exchange service and exchange access as a prerequisite to obtaining interconnection to the

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[368] As the U.S. Court of Appeals for the Fifth Circuit stated in *Peacock v. Lubbock Compress Company*, "the word 'and' is not a word with a single meaning, for chameleonlike, it takes its color from its surroundings." The court held that "[i]n the construction of statutes, it is the duty of the Court to ascertain the clear intention of the legislature. In order to do this, Courts are often compelled to construe 'or' as meaning 'and,' and again 'and' as meaning 'or'." *Peacock v. Lubbock Compress Company*, 252 F.2d 892, 893 (5th Cir. 1958) (*citing United States v. Fisk*, 70 U.S. 445, 448).

[369] 47 U.S.C. § 153(26) (emphasis added).

[370] 47 U.S.C. § 251(c)(2) (emphasis added).

[371] Where Congress intended to impose obligations on requesting carriers in section 251(c), it did so expressly. For example, section 251(c)(1) includes a specific and separate requirement on requesting carriers to negotiate in good faith. 47 U.S.C. § 251(c)(1).

[372] One definition of the word "and" is "as well as." Random House College Dictionary 50 (rev. ed. 1984). Under this definition, the provision can be read, and we believe should be read, to require LECs to provide interconnection for the transmission and routing of telephone exchange service as well as exchange access.

incumbent LEC's network under subsection (c)(2) would unduly restrict potential competitors. For example, CAPs often enter the telecommunications market as exchange access providers prior to offering telephone exchange services. Further, applying separate regulatory regimes (*i.e.*, section 251 related-rules for providers of telephone exchange and exchange access services and section 201 related-rules for providers of only exchange access services) with divergent requirements to parties using essentially the same equipment to transmit and route traffic, is undesirable in light of the new procompetitive paradigm created by section 251.[373] We see no convincing justification for treating providers of exchange access services that offer telephone exchange services differently from access providers who do not offer telephone exchange services. We therefore conclude that parties offering only exchange access are permitted to seek interconnection pursuant to section 251(c)(2).

D. Interexchange Service is Not Telephone Exchange Service or Exchange Access

1. Background

186. Sections 251(c)(2) and 251(c)(3) impose duties upon incumbent LECs to provide interconnection and nondiscriminatory access to unbundled network elements to "any requesting telecommunications carrier."[374] In the NPRM, we tentatively concluded that carriers providing interexchange services are "telecommunications carriers" and thus may seek interconnection and unbundled elements under subsections (c)(2) and (c)(3). We also tentatively concluded, however, that with respect to section 251(c)(2), the statute imposes limits on the purposes for which any telecommunications carrier, including IXCs, may request interconnection pursuant to that section. Section 251(c)(2) imposes an obligation upon incumbent LECs to provide requesting carriers with interconnection if the purpose of the interconnection is for the "transmission and routing of telephone exchange service and exchange access."[375] We tentatively concluded in the NPRM that interexchange service does not appear to constitute either "telephone exchange service" or "exchange access." "Exchange access" is defined in section 3(16) as "the offering of access to telephone exchange services or facilities for the purpose of the origination or termination of telephone toll services."[376] We stated that an IXC that requests interconnection to originate or terminate an interexchange toll call is not "offering" access services, but rather is "receiving" access services.

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[373] *See infra*, Section VI.B.2.a. for a discussion of the relationship between *Expanded Interconnection* tariffs and section 251. Competitive access providers use the same equipment in essentially the same manner as other providers of both telephone exchange and exchange access services.

[374] 47 U.S.C. §§ 251(c)(2) and (c)(3).

[375] 47 U.S.C. § 251(c)(2)(A).

[376] 47 U.S.C. § 153(16).

2. Comments

187. DOJ and the Illinois Commission agree with the Commission's tentative conclusion that IXCs may obtain interconnection pursuant to 251(c)(2) to provide exchange service and exchange access.[377] DOJ states that this would permit IXCs to participate fully in the provision of local exchange and exchange access services.[378]

188. Many parties, including several incumbent LECs and DOJ, agree with the Commission's tentative conclusion in the NPRM that carriers are not permitted to receive interconnection pursuant to 251(c)(2) solely for the purpose of originating or terminating interexchange traffic.[379] Several parties contend that, although IXCs are telecommunications carriers under the 1996 Act, they provide neither "exchange service" nor "exchange access" when they offer only long distance service to their customers.[380] Some commenters assert that an IXC requesting interconnection to originate or terminate a toll call would be receiving access services, not offering them, and thus would not fall within the definition of exchange access.[381] Parties also claim that permitting interconnection for this purpose would conflict with the plain meaning of sections 251(i)[382] and (g).[383] USTA argues that section 251(g)

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[377] DoJ comments at 42-43; Illinois Commission comments at 48-49.

[378] DoJ comments at 42-43.

[379] *See, e.g.*, BellSouth comments at 60-61; NYNEX comments at 5; GTE comments at 75; DoJ comments at 42; California Commission comments at 34; Bell Atlantic reply at 4-5; PacTel reply at 36; Rural Tel. Coalition reply at 8; NYNEX reply at 7 (it is not a question of the type of party that is applying for interconnection but rather the purpose for which the interconnection is being sought).

[380] DoJ comments at 42; USTA reply at 5; BellSouth reply at 45. NYNEX argues that, although some parties contend that section 251(c)(2)(A) refers to the services that the incumbent LEC provides rather than the services the requesting carrier seeks, this is contrary to the most natural reading of the language of the statute and is inconsistent with the legislative history, which makes clear that the section was intended to apply to interconnection between LECs. NYNEX reply at 7-8.

[381] *See, e.g.*, DoJ comments at 42; USTA reply at 5; BellSouth reply at 45; PacTel reply at 36; Sprint reply at 33; Rural Tel. Coalition reply at 8.

[382] *See, e.g.*, USTA comments at 61; Bell Atlantic comments at 9; NYNEX comments at 12-13; NYNEX reply at 9-10; Rural Tel. Coalition reply at 9.

requires LECs to continue to provide exchange access service to IXCs under the Commission's existing rules. USTA claims that if Congress had intended to change the access charge regime within the timeframe for implementing section 251, it would not have granted the Joint Board, created under section 254, nine months to make recommendations to the Commission.[384] Several parties also argue that the legislative history supports the conclusion that section 251 was not designed to permit IXCs to avoid application of our current access charge rules.[385] Other carriers claim that permitting interconnection pursuant to section 251(c)(2) to allow parties to avoid access charges would be unwise from a policy perspective, because it would divest the Commission of jurisdiction over the rates for interstate exchange access services,[386] and would preempt state pricing regulations that were the result of years of consideration.[387]

189. IXCs and others argue that section 251(c)(2) permits carriers to obtain interconnection solely for the purpose of originating and terminating interexchange traffic.[388] CompTel claims that IXCs satisfy the "offering" requirement when they offer and provide

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[383] *See, e.g.*, USTA comments at 61; NYNEX comments at 13; Bell Atlantic comments at 9; GTE comments at 75; Citizens Utilities comments at 22; Rural Tel. Coalition reply at 10. GTE argues that if, as some parties claim, section 251(g) preserves the Commission's access charge regime only until the Commission adopts new rules under section 251(d), this renders section 251(g) unnecessary because the need to preserve those rules does not arise until the new section 251(d) rules are implemented. GTE reply at 39. Also, GTE claims that interpreting section 251(g) as maintaining only the existing equal access and nondiscrimination requirements of the MFJ, GTE Decree, and the Commission's rules overlooks the fact that section 251(g) explicitly preserves rules regarding "receipt of compensation" for such access. *Id.*

[384] USTA comments at 61.

[385] *See, e.g.*, NECA comments at 4-5; PacTel reply at 36; Rural Tel. Coalition reply at 9-10 (the Joint Explanatory Statement (p. 123) evinces Congress's intent to preserve the Commission's access charge regime and authority over interstate access).

[386] Ameritech comments at 21; Bell Atlantic comments at 10; NYNEX comments at 78; PacTel reply at 36; Rural Tel. Coalition reply at 8.

[387] NYNEX comments at 19; NECA comments at 2-4.

[388] *See, e.g.*, AT&T reply at 23; MCI reply at 20-22; CompTel reply at 25-26; American Petroleum Institute comments at 3-13; ALTS comments at 46; Cable & Wireless comments at 28; Citizens Utilities comments at 21; Excel comments at 3 (use restrictions will hinder competition).

exchange access as an integral part of long distance service to the end-user subscribers.[389] Cable and Wireless claims that section 251(i) merely preserves the Commission's authority under section 201(a), which requires carriers to establish physical connection with each other in compliance with the Commission's rules.[390] ALTS argues that any erosion of access revenues that might occur as a result of the IXCs' migration to section 251 interconnection arrangements would not occur so rapidly as to affect incumbent LECs materially before the Commission completes its reform of the universal service subsidy flows.[391] CompTel suggests an interim plan that would permit incumbent LECs to charge non-cost-based rates for access until the Commission completes access charge reform, but would declare that until that time, incumbent LECs would be deemed not to have met the section 271 checklist for providing in-region interexchange service.[392] Excel claims that it would be unlawful under section 202(a) for an IXC to pay charges for local network connections that are substantially higher than the charges paid by other users of the same network services.[393] Finally, CompTel and MCI argue that the legislative history of section 251 supports the conclusion that IXCs are permitted to obtain interconnection pursuant to section 251.[394]

3. Discussion

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[389] CompTel comments at 51-52. CompTel claims that by writing a broader "offering" requirement into the statute, the FCC would limit interconnection under section 251(c)(2) to LECs, and not "telecommunications carriers" as Congress intended. CompTel also claims that there is no feasible interpretation that would prevent IXCs, regardless of whether they "offer" exchange access, from obtaining stand-alone exchange access indirectly through co-carrier interconnection arrangements under section 251(c)(2). CompTel reply at 31-32. Cable & Wireless claims that the canons of statutory construction preclude a reading of the Act that holds that Congress provided all telecommunications providers with the ability to purchase access to unbundled elements for telecommunications services, but forbade them from interconnecting to the network in order to utilize unbundled elements for all telecommunications services. Cable & Wireless comments at 29.

[390] Cable & Wireless comments at 31.

[391] ALTS comments at 46; Citizens Utilities comments at 21; MCI reply at 21 (the loss of access charge revenues for incumbent LECs due to the Act cannot be used to deny the full benefits of section 251 to IXCs).

[392] CompTel comments at 81-87.

[393] Excel comments at 4-5.

[394] CompTel reply at 32 (although the Senate bill, S.652, expressly required requesting carriers to obtain interconnection for the purpose of providing exchange access service, Congress rewrote that provision in conference to remove the requirement that carriers obtain interconnection for the purpose of providing exchange access); MCI reply at 21 (arguments based on provisions in unenacted drafts of the Act excluding access from the local interconnection provisions are rebutted by the fact that both the House and Senate bills included provisions mandating cost-based access rates in other sections).

190. We conclude that IXCs are telecommunications carriers[395] under the 1996 Act, because they provide telecommunications services[396] (*i.e.*, "offer telecommunications for a fee directly to the public") by originating or terminating interexchange traffic. IXCs are permitted under the statute to obtain interconnection pursuant to section 251(c)(2) for the "transmission and routing of telephone exchange service and exchange access."[397] Moreover, traditional IXCs are a significant potential new local competitor and we conclude that denying them the right to obtain section 251(c)(2) interconnection lacks any legal or policy justification. Thus, all carriers (including those traditionally classified as IXCs) may obtain interconnection pursuant to section 251(c)(2) for the purpose of terminating calls originating from their customers residing in the same telephone exchange (*i.e.*, non-interexchange calls).

191. We conclude, however, that an IXC that requests interconnection solely for the purpose of originating or terminating its *interexchange* traffic, not for the provision of telephone exchange service and exchange access to others, on an incumbent LEC's network is not entitled to receive interconnection pursuant to section 251(c)(2).[398] Section 251(c)(2) states that incumbent LECs have a duty to interconnect with telecommunications providers "for the transmission and routing of telephone exchange service and exchange access."[399] A telecommunications carrier seeking interconnection only for interexchange services is not within the scope of this statutory language because it is not seeking interconnection for the purpose of providing telephone exchange service. Nor does a carrier seeking interconnection of interstate traffic only -- for the purpose of providing interstate services only -- fall within the scope of the phrase "exchange access." Such a would-be interconnector is not "offering" access to telephone exchange services. As we stated in the NPRM, an IXC that seeks to interconnect solely for the purpose of originating or terminating its own interexchange traffic

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[395] 47 U.S.C. § 153(44).

[396] 47 U.S.C. § 153(46).

[397] 47 U.S.C. § 251(c)(2).

[398] As stated above, interconnection pursuant to section 251(c)(2) is merely the physical linking of facilities between two networks, and thus access charges are not implicated by the Commission's decisions regarding whether parties who seek to interconnect solely for the purpose of originating or terminating interexchange traffic on the incumbent's network are entitled to obtain interconnection pursuant to section 251(c)(2). *See supra*, Section IV.A.

[399] Section 153(47) defines telephone exchange service as "(A) service within a telephone exchange, or within a connected system of [ ] exchanges within the same exchange area operated to furnish . . . intercommunicating service of the character ordinarily furnished by a single exchange, and which is covered by the exchange service charge, or (B) comparable service provided through a system of switches, transmission equipment, or other facilities . . . ." 47 U.S.C. § 153(47). Section 153(16) states that exchange access means "the offering of access to telephone exchange services or facilities for the purpose of the origination or termination of telephone toll services." 47 U.S.C. § 153(16).

is not offering access, but rather is only obtaining access for its own traffic. Thus, we disagree with CompTel's position that IXCs are offering exchange access when they offer and provide exchange access as a part of long distance service. We conclude that a carrier may not obtain interconnection pursuant to section 251(c)(2) for the purpose of terminating interexchange traffic, even if that traffic was originated by a local exchange customer in a different telephone exchange of the same carrier providing the interexchange service, if it does not offer exchange access services to others. As we stated above, however, providers of competitive access services are eligible to receive interconnection pursuant to section 251(c)(2). Thus, traditional IXCs that offer access services in competition with an incumbent LEC (*i.e.*, IXCs that offer access services to other carriers as well as to themselves) are also eligible to obtain interconnection pursuant to section 251(c)(2). For example, when an IXC interconnects at a local switch, bypassing the incumbent LECs' transport network, that IXC may offer access to the local switch in competition with the incumbent. In such a situation, the interconnection point may be considered a section 251(c)(2) interconnection point.

E. Definition of "Technically Feasible"

1. Background

192. In addition to specifying the purposes for which carriers may request interconnection, section 251(c)(2) obligates incumbent LECs to provide interconnection within their networks at any "technically feasible point."[400] Similarly, section 251(c)(3) obligates incumbent LECs to provide access to unbundled elements at any "technically feasible point." Thus our interpretation of the term "technically feasible" applies to both sections.

193. In the NPRM, we sought comment on a "dynamic" definition of "technically feasible" that would provide flexibility for negotiating parties and the states in determining interconnection and unbundling points as network technology evolves.[401] We requested comment on the extent to which network reliability concerns should be included in a technical feasibility analysis, and tentatively concluded that, if such concerns were involved, the incumbent LEC had the burden to support such a claim with detailed information.[402] We also sought comment on the role of other considerations, such as economic burden, in determining technical feasibility under sections 251(c)(2) and 251(c)(3).[403]

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[400] 47 U.S.C. § 251(c)(2)(B).

[401] NPRM at paras. 56-59, 87-88.

[402] *Id.* at paras. 56, 88.

[403] *Id.* at paras. 56-59, 87-88.

194. We also tentatively concluded that interconnection or access at a particular point in one LEC network evidences the technical feasibility of providing the same or similar interconnection or access in another, similarly structured LEC network.[404] Finally, we tentatively concluded that incumbent LECs have the burden of proving the technical infeasibility of providing interconnection or access at a particular point.[405]

2. Comments

195. Commenters offer a wide range of interpretations of the term "technically feasible." Many commenters urge the Commission to offer only broad guidelines with respect to technical feasibility and allow the parties and the states to determine the details.[406] Most BOCs and other LECs argue that "technically feasible" does not mean technically possible or imaginable, and that other factors should be considered in determining what points are technically feasible.[407] Other factors offered by the commenters include cost, network reliability and security, space limitations, the existence of operations support systems, quality of service provided, interoperability, field trials, performance standards, industry standards, the need for construction of new facilities, and inherent fairness.[408] USTA, SBC, and others allege that previous Commission orders have considered economic issues in technical feasibility analyses.[409] GVNW argues that small LECs should not be required to unbundle if it is economically unreasonable.[410] The Rural Telephone Coalition contends that the

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[404] *Id.* at paras. 57, 87.

[405] *Id.* at paras. 58, 87.

[406] *See, e.g.*, USTA comments at 11; Bell Atlantic comments at 15; U S West comments at 44; BellSouth reply at 18; California Commission comments at 19; Texas Commission comments at 11; Citizens Utilities comments at 8 (parties are in the best position to determine the technical requirements and abilities).

[407] *See, e.g.*, SBC comments at 25; BellSouth comments at 16; USTA comments at 11; U S West reply at 22.

[408] *See, e.g.*, NYNEX comments at 65-66; SBC reply at 17; Ameritech comments at 16; ALLTEL comments at 7-8; Roseville Tel. comments at 5-6; U S West reply at 22; Lincoln Tel. reply at 3; *see also* USTA comments at 10-12; Florida Commission comments at 13-14; DoD comments at 6 (network reliability must be considered in technical feasibility). GVNW believes that interconnection is technically feasible if: (1) the interconnection point is a normal LEC access point for provisioning of service to its customers; (2) the LEC maintains assignment records for the point; (3) LEC personnel access facilities at the point for interconnecting other LEC facilities; (4) cross-connecting the facility at the point does not expose the network to undue damage; and (5) the LEC and requesting carriers can demonstrate the technical proficiency of personnel assigned to work at the interconnect point. GVNW comments at 18-19.

[409] *See, e.g.*, USTA comments at 12 n.16; SBC comments at 16.

[410] GVNW comments at 21-22.

Commission should recognize the differences between small and large operations, high-volume and low-volume local networks, and urban and rural carriers and networks.[411] USTA also suggests that the statute only requires incumbent LECs to provide interconnection to their networks as they are configured presently and that it does not require incumbent LECs to take risky or unreasonable steps to construct new facilities or reconfigure their networks in response to competitor requests.[412]

196. Many potential competitors argue that the definition of "technical feasibility" should be extremely broad and dynamic, to encompass the effects of future technical changes.[413] Sprint contends that the Commission should use the plain meaning of the word "feasible" in defining technical feasibility. Sprint states that Webster's Dictionary defines "feasible" as "possible of realization" and any more restrictive reading would unduly restrict the availability of interconnection.[414] Many parties contend that incumbent LECs should have the burden of proving specific points are not technically feasible.[415] Time Warner claims that any point should be presumptively technically feasible and those claiming technical infeasibility should bear the burden of proof.[416] AT&T argues that existing industry standards for interconnection at a point evidences the technical feasibility of interconnection at such a point.[417] MCI argues that technically feasible points of interconnection may be either

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[411] Rural Tel. Coalition comments at 31.

[412] *See, e.g.*, USTA comments at 11; BellSouth comments at 16; SBC comments at 25; Lincoln Tel. reply at 3; Roseville Tel. comments at 5-6; Office of the Ohio Consumers' Counsel comments at 10; ALLTEL reply at 5-6.

[413] *See, e.g.*, MCI comments at 12-13; MFS comments at 15; Teleport comments at 25; Nortel comments at 7; Continental Cablevision comments at 20; NCTA comments at 32; Time Warner reply at 13 (all points should be presumptively technically feasible and those claiming technical infeasibility should bear the burden of proof); Colorado Commission comments at 18; Michigan Commission comments at 8-9; Attorneys General of Connecticut *et al.* reply at 4 n.2; Hyperion comments at 10; Independent Cable & Telecomm. Ass'n reply at 9.

[414] Sprint reply at 16; ACSI reply at 6.

[415] *See, e.g.*, MCI comments at 11; Continental Cablevision comments at 20; CompTel comments at 41; Sprint comments at 14; Cox comments at 42; AT&T reply at 11; DoJ comments at 19; California Commission comments at 19; Alabama Commission comments at 15; Ohio Commission comments at 25; Colorado Commission comments at 19.

[416] Time Warner reply at 13; MCI reply at 23 (incumbent LECs do not argue that interconnection points are not technically feasible but rather that the Commission reverse its tentative conclusion that the burden of proof falls on incumbent LECs to demonstrate technical infeasibility); Cable & Wireless comments at 13 (technical feasibility can be assessed by examining the type and quality of interconnection an incumbent LEC already provides to itself, its affiliates and co-carriers).

[417] AT&T comments at 33.

physical, for facilities and equipment, or logical, for software and databases.[418] Several parties ask the Commission to make clear that technical feasibility does not require that operations support systems for order processing, provisioning and installation, billing, and other support functions be in place in order to make a specific interconnection point technically feasible.[419] Several competing carriers also contend that economic factors should not be considered in determining technically feasibile points of interconnection and access to unbundled elements. They argue that if incumbent LECs are not required to expend any funds or resources to provide for technically feasible interconnection or access, competing carriers will be limited to the services currently offered by the incumbents.[420]

197. Some parties propose specific definitions of technical feasibility. For example, Sprint defines "technically feasible" as "possible to accomplish without a scientific or technological breakthrough, *i.e.*, without an advance in the state of the art."[421] MFS defines the term as "any point in an [incumbent LEC's] network where suitable transmission, cross-connect or switching facilities are present to permit the routing of traffic to and from another network."[422]

3. Discussion

198. We conclude that the term "technically feasible" refers solely to technical or operational concerns, rather than economic, space, or site considerations. We further conclude that the obligations imposed by sections 251(c)(2) and 251(c)(3) include modifications to incumbent LEC facilities to the extent necessary to accommodate interconnection or access to network elements. Specific, significant, and demonstrable network reliability concerns associated with providing interconnection or access at a particular point, however, will be regarded as relevant evidence that interconnection or access at that point is technically infeasible. We also conclude that preexisting interconnection or access at a particular point evidences the technical feasibility of interconnection or access at substantially similar points.

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[418] MCI comments at 12; IDCMA reply at 6-7.

[419] *See, e.g.*, MCI comments at 12, Sprint reply at 16-17; AT&T reply at 10 (the need for additional investment to make an arrangement available should not result in a determination of technical infeasibility); Time Warner reply at 15, 17; ACTA comments at 10;

[420] *See, e.g.*, AT&T comments at 14-20; MCI reply at 23-29; Sprint reply at 16; Time Warner reply at 16.

[421] Sprint reply at 15-16; Time Warner reply at 13 (any point of interconnection should be presumptively technically feasible).

[422] MFS comments at 15.

Finally, we conclude that incumbent LECs must prove to the appropriate state commission that a particular interconnection or access point is not technically feasibile.

199. We find that the 1996 Act bars consideration of costs in determining "technically feasible" points of interconnection or access. In the 1996 Act, Congress distinguished "technical" considerations from economic concerns. Section 251(f), for example, exempts certain rural LECs from "unduly economically burdensome" obligations imposed by section 251(c) even where satisfaction of such obligations is "technically feasible."[423] Similarly, section 254(h)(2)(A) treats "technically feasible" and "economically reasonable" as separate requirements.[424] Finally, we note that the House committee that considered H.R. 1555 (which was combined with Senate Bill S.652 to form the 1996 Act) dropped the term "economically reasonable" from its unbundling provision. The House committee explicitly addressed this substantive change, reporting that "this requirement could result in certain unbundled . . . elements . . . not being made available."[425] Thus, the deliberate and explained substantive omission of explicit economic requirements in sections 251(c)(2) and 251(c)(3) cannot be undone through an interpretation that such considerations are implicit in the term "technically feasible." Of course, a requesting carrier that wishes a "technically feasible" but expensive interconnection would, pursuant to section 252(d)(1), be required to bear the cost of that interconnection, including a reasonable profit.[426]

200. USTA and SBC cite the Commission's *900 Service* order[427] as support for the contention that costs must be considered in a technical feasibility analysis.[428] In that order, the Commission concluded that "[i]n defining 'technically feasible,' we balance both technical and economic considerations with a view toward providing [900] blocking capability to consumers without imposing undue economic burdens on LECs."[429] Our *900 Service* order,

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[423] 47 U.S.C. § 251(f)(1)(A).

[424] 47 U.S.C. § 254(h)(2)(A).

[425] H. Rep. 104-204, 71 (1995).

[426] *See* 47 U.S.C. § 252(d)(1); *see also infra*, Section VII (concluding that requesting carriers must pay incumbent LECs the cost of interconnection or unbundling).

[427] *Policies and Rules Concerning Interstate 900 Telecommunications Services*, Report and Order, 6 FCC Rcd 6166, 6174 (1991) *(900 Service)*.

[428] USTA comments at 12 n.16; SBC reply at 16.

[429] *900 Service* at 6174.

however, has little bearing on our interpretation of the term "technically feasible" in the 1996 Act. As stated above, the 1996 Act distinguishes technical considerations from the "undue economic burdens" considered in the *900 Service* order. Indeed, Congress used virtually the same language—"unduly economically burdensome"—in drawing the distinction.[430] If, as SBC contends, we are to presume that Congress was aware of the Commission's analysis of the technical feasibility of 900 call blocking,[431] the 1996 Act appears squarely to reject that view of technical feasibility. Moreover, unlike the costs of providing 900 call blocking, which we imposed largely on LECs in the *900 Service* order, as noted above, to the extent incumbent LECs incur costs to provide interconnection or access under sections 251(c)(2) or 251(c)(3), incumbent LECs may recover such costs from requesting carriers.

201. In addition to economic considerations, section 251(c)(6) distinguishes considerations of "space limitations" from those of "technical reasons," and thus, in general, we believe existing space or site restrictions should not be included within a technical feasibility analysis.[432] Of course, under section 251(c)(6) "space" restrictions are expressly considered along with "technical" considerations in determining whether an incumbent LEC must provide for physical collocation. Where physical collocation is not practical because of "space limitations," however, incumbent LECs must provide for virtual collocation.[433] Section 251 is silent as to whether an incumbent LEC's duty to provide for virtual collocation or other methods of interconnection or access to unbundled elements is dependent on space constraints. We conclude, as a practical matter, that space limitations at a particular network site, without any possibility of expansion, may render interconnection or access at that point infeasible, technically or otherwise. Where such expansion is possible, however, we conclude that, in light of the distinction drawn in section 251(c)(6), site restrictions do not represent a "technical" obstacle. Again, however, the requesting party would bear the cost of any necessary expansion. Nor do we believe the term "technical," when interpreted in accordance with its ordinary meaning as referring to engineering and operational concerns in the context of sections 251(c)(2) and 251(c)(3),[434] includes consideration of accounting or billing restrictions.

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[430] *See* 47 U.S.C. § 251(f)(1)(A).

[431] SBC reply at 16 ("Presumably Congress was aware of this FCC definition of the term "technically feasible" when Congress chose to use it in the 1996 Act.").

[432] 47 U.S.C. § 251(c)(6).

[433] *Id.*

[434] *See* Random House College Dictionary at 1349 ("6. pertaining to or connected with the mechanical or industrial arts and the applied sciences").

202. Several parties also attempt to draw a distinction between what is "feasible" under the terms of the statute, and what is "possible." The words "feasible" and "possible," however, are used synonymously. Feasible is defined as "capable of being accomplished or brought about; possible."[435] The statute itself provides a more meaningful distinction. Unlike the "technically *feasible*" terminology included in sections 251(c)(2) and 251(c)(3), section 251(c)(6) uses the term "*practical* for technical reasons" in determining the scope of an incumbent LEC's obligation to provide for physical collocation.[436] "Practical" is defined as "manifested in practice or action . . . not theoretical or ideal"[437] or "adapted or designed for actual use; useful," and connotes similarity to ordinary usage.[438] Thus, it is reasonable to interpret Congress's use of the term "feasible" in sections 251(c)(2) and 251(c)(3) as encompassing more than what is merely "practical" or similar to what is ordinarily done. That is, use of the term "feasible" implies that interconnecting or providing access to a LEC network element may be feasible at a particular point even if such interconnection or access requires a novel use of, or some modification to, incumbent LEC equipment. This interpretation is consistent with the fact that incumbent LEC networks were not designed to accommodate third-party interconnection or use of network elements at all or even most points within the network. If incumbent LECs were not required, at least to some extent, to adapt their facilities to interconnection or use by other carriers, the purposes of sections 251(c)(2) and 251(c)(3) would often be frustrated. For example, Congress intended to obligate the incumbent to accommodate the new entrant's network architecture by requiring the incumbent to provide interconnection "for the facilities and equipment" of the new entrant. Consistent with that intent, the incumbent must accept the novel use of, and modification to, its network facilities to accommodate the interconnector or to provide access to unbundled elements.

203. We also conclude, however, that legitimate threats to network reliability and security must be considered in evaluating the technical feasibility of interconnection or access to incumbent LEC networks. Negative network reliability effects are necessarily contrary to a finding of technical feasibility. Each carrier must be able to retain responsibility for the management, control, and performance of its own network. Thus, with regard to network reliability and security, to justify a refusal to provide interconnection or access at a point requested by another carrier, incumbent LECs must prove to the state commission, with clear

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[435] The American Heritage College Dictionary 499 (1993). Webster's Ninth New Collegiate Dictionary 453 (1989). Both "feasible" and "possible" refer to that which is "capable of being realized" *Id.* at 918.

[436] 47 U.S.C. § 251(c)(6) (emphasis added).

[437] Webster's at 923.

[438] Random House College Dictionary 1040 (rev. ed. 1984).

and convincing evidence, that specific and significant adverse impacts would result from the requested interconnection or access. The reports of the Commission's Network Reliability Council discuss network reliability considerations, and establish templates that list activities that need to occur when service providers connect their networks pursuant to defined interconnection specifications or when they are attempting to define a new network interface specification.[439]

204. We further conclude that successful interconnection or access to an unbundled element at a particular point in a network, using particular facilities, is substantial evidence that interconnection or access is technically feasible at that point, or at substantially similar points in networks employing substantially similar facilities. In comparing networks for this purpose, the substantial similarity of network facilities may be evidenced, for example, by their adherence to the same interface or protocol standards. We also conclude that previous successful interconnection at a particular point in a network at a particular level of quality constitutes substantial evidence that interconnection is technically feasible at that point, or at substantially similar points, at that level of quality. Although most parties agree with this conclusion, some LECs contend that such comparisons are all but impossible because of alleged variability in network technologies, even where the ultimate services offered by separate networks are the same. We believe that, if the facilities are substantially similar, the LECs' contention is adequately addressed.

205. Finally, because sections 251(c)(2) and 251(c)(3) impose duties upon incumbent LECs, we conclude that incumbent LECs must prove to the appropriate state commission that interconnection or access at a point is not technically feasible. Incumbent LECs possess the information necessary to assess the technical feasibility of interconnecting to particular LEC facilities. Further, incumbent LECs have a duty to make available to requesting carriers general information indicating the location and technical characteristics of incumbent LEC network facilities. Without access to such information, competing carriers would be unable to make rational network deployment decisions and could be forced to make inefficient use of their own and incumbent LEC facilities, with anticompetitive effects.

206. We have considered the economic impact of our rules in this section on small incumbent LECs. For example, the Rural Telephone Coalition argues that the Commission should set interconnection points in a flexible manner to recognize the differences between carriers and regions. We do not adopt the Rural Telephone Coalition's position because we believe that, in general, the Act does not permit incumbent LECs to deny interconnection or access to unbundled elements for any reason other than a showing that it is not technically feasible. We believe that this interpretation will advance the procompetitive goals of the

[439] *Network Reliability: A Report to the Nation* (1993, National Engineering Consortium); *Network Reliability: The Path Forward* (1996, Internet: http://www.fcc.gov/oet/nrc).

statute. We also note, however, that section 251(f) of the 1996 Act provides relief to certain small LECs from our regulations implementing section 251.

F. Technically Feasible Points of Interconnection

1. Background

207. In the NPRM, we requested comment on which points within an incumbent LEC's network constitute "technically feasible" points for purposes of section 251(c)(2).[440] Having defined the phrase "technically feasible" above, we now determine a minimum set of technically feasible points of interconnection.

2. Comments

208. Incumbent LECs claim that the specific points of interconnection should either be left to the negotiation process, or that the Commission should require interconnection only at core points, and leave all other points to the negotiation process.[441] For example, Ameritech claims that it is only technically feasible for competitors to interconnect at its end or tandem offices.[442] Bell Atlantic asserts that the trunk- and loop-side of the local switch, transport facilities, tandem facilities, and the signal transfer points (STPs) are the only technically feasible points for interconnection.[443] Potential competitors, on the other hand, argue that interconnection is technically feasible, and should be mandated by the Commission, at numerous points in the incumbent LEC's network.[444] AT&T, for example, argues that interconnection is technically feasible: (1) at the loop concentrator; (2) between the loop feeder element and the competitive provider's switch; (3) between the incumbent LEC's switch and the competitive provider's operator systems; (4) between a competitive provider's switch and a LEC's signaling A link; (5) between a competitive provider's signaling A link

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[440] NPRM at paras. 56-59.

[441] *See, e.g.*, USTA comments at 10-11; BellSouth comments at 15-19; NYNEX comments at 65 (points of interconnection should be left to negotiation); Ameritech comments at 13-14; PacTel comments at 21-22; Oregon Commission comments at 25-26.

[442] Ameritech comments at 13-14; Ohio Commission comments at 24.

[443] Bell Atlantic comments at 20-21; Lincoln Tel. comments at 5.

[444] ALTS comments at 18 (interconnection should be available at any technically feasible point regardless of the technical fabric of the network at the requested point); MCI comments at 12-13 (technically feasible points may be either physical, for facilities and equipment, or logical, for software and databases); Time Warner reply at 15 (interconnection should not be limited to "core requirements" because the statute mandates interconnection at any technically feasible point).

and an incumbent LEC's STP; (6) between a competitive provider's dedicated transport and an incumbent LEC's office; and, (7) between incumbent LEC and non-incumbent LEC STPs.[445] MFS argues that, regardless of the specific points listed by the Commission, states should be able to expand the list of technically feasible points.[446]

3. Discussion

209. We conclude that we should identify a minimum list of technically feasible points of interconnection that are critical to facilitating entry by competing local service providers. Section 251(c)(2) gives competing carriers the right to deliver traffic terminating on an incumbent LEC's network at any technically feasible point on that network, rather than obligating such carriers to transport traffic to less convenient or efficient interconnection points. Section 251(c)(2) lowers barriers to competitive entry for carriers that have not deployed ubiquitous networks by permitting them to select the points in an incumbent LEC's network at which they wish to deliver traffic. Moreover, because competing carriers must usually compensate incumbent LECs for the additional costs incurred by providing interconnection, competitors have an incentive to make economically efficient decisions about where to interconnect.[447]

210. We conclude that, at a minimum, incumbent LECs must provide interconnection at the line-side of a local switch (at, for example, the main distribution frame), the trunk-side of a local switch; the trunk interconnection points for a tandem switch; and central office cross-connect points in general. This requirement includes interconnection at those out-of-band signaling transfer points necessary to exchange traffic and access call related databases. All of these points of interconnection are used today by competing carriers, noncompeting carriers, or LECs themselves for the exchange of traffic, and thus we conclude that interconnection at such points is technically feasible.

211. A varied group of commenters, including Bell Atlantic and AT&T, agree that interconnection at the line-side of the switch is technically feasible.[448] Interconnection at this

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[445] Letter from Bruce Cox and Betsy Brady, AT&T, to Regina M. Keeney, Common Carrier Bureau, FCC, March 21, 1996, at 29-32 (AT&T March 21 Letter).

[446] MFS comments at 14.

[447] *See* Robert S. Pendyck and Daniel L. Rubinfeld, Microeconomics (2nd ed. 1992).

[448] *See, e.g.*, Bell Atlantic comments at 20-21; NYNEX comments at 65; BellSouth reply at 23; AT&T March 21 Letter at 30.

point is currently provided to some commercial mobile radio service (CMRS) carriers[449] and may be necessary for other competitors that have their own distribution plant, but seek to interconnect to the incumbent's switch. We also agree with numerous commenters that claim that interconnection at the trunk-side of a switch is technically feasible and should be available upon request.[450] Interconnection at this point is currently used by competing carriers to exchange traffic with incumbent LECs. Interconnection to tandem switching facilities is also currently used by IXCs and competing access providers, and is thus technically feasible. Finally, central office cross-connect points, which are designed to facilitate interconnection, are natural points of technically feasible interconnection to, for example, interoffice transmission facilities. There may be rare circumstances where there are true technical barriers to interconnection at the line- or trunk-side of the switch or at central office cross-connect points, however, the parties have not presented us with any such circumstances. Thus, incumbent LECs must prove to the state commissions that such points are not technically feasible interconnection points.

212. We also note that the points of access to unbundled elements discussed below may also serve as points of interconnection (*i.e.*, points in the network that may serve as places where potential competitors may wish to exchange traffic with the incumbent LEC other than for purposes of gaining access to unbundled elements), and thus we incorporate those points by reference here. Finally, as noted above, we have identified a minimum list of technically feasible interconnection points: (1) the line-side of a local switch; (2) the trunk-side of a local switch; (3) the trunk interconnection points for a tandem switch; (4) central office cross-connect points; (5) out-of-band signaling transfer points; and (6) the points of access to unbundled elements. In addition, we anticipate and encourage parties and the states, through negotiation and arbitration, to identify additional points of technically feasible interconnection. We believe that the experience of the parties and the states will benefit our ongoing review of interconnection.

G. Just, Reasonable, and Nondiscriminatory Rates, Terms, and Conditions of Interconnection

1. Background

213. Section 251(c)(2)(D) requires that incumbent LECs provide interconnection "on rates, terms, and conditions that are just, reasonable, and nondiscriminatory."[451] In the NPRM,

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[449] AT&T comments in CC Docket No. 95-185 at 6 n.6 (Mar. 4, 1996).

[450] *See, e.g.*, Bell Atlantic comments at 20-21; BellSouth reply at 23; NYNEX comments at 65; Lincoln Tel. comments at 5.

[451] 47 U.S.C. §§ 251(c)(2)(D), 251(c)(3).

we sought comment on whether we should adopt national requirements governing the terms and conditions of providing interconnection. We also sought comment on how we should determine whether the terms and conditions for interconnection arrangements are just, reasonable, and nondiscriminatory, and how we should enforce such rules. In particular, we sought comment on whether we should adopt national guidelines governing installation, service, maintenance, and repair of the incumbent LEC's portion of interconnection facilities.[452]

2. Comments

214. MCI argues that incumbent LECs should not be permitted to set restrictions on the type of traffic that can be combined on a single trunk group unless signaling requirements dictate the need for separate trunk groups. Rather, MCI argues that incumbent LECs should be required to accept one-way and two-way trunk groups.[453] MCI also urges the Commission to require incumbents and competitors to select one point of interconnection (POI) on the other carrier's network at which to exchange traffic. MCI further requests that this POI be the location where the costs and responsibilities of the transporting carrier ends and the terminating carrier begins.[454] NEXTLINK argues that incumbent LECs should only be permitted to require earnest fees of new entrants if such fees are required of other incumbent LEC customers.[455]

215. Many incumbent LECs, state commissions, and others oppose explicit national rules regarding standards for just, reasonable, and nondiscriminatory terms of interconnection

[452] We discuss the rates for interconnection below in Section VII.

[453] MCI comments at 40-41.

[454] Under MCI's proposal, new entrants would be considered co-carriers with incumbent LECs, and each carrier that seeks to interconnect with an incumbent LEC would be required to designate, for each local calling area, at least one point of interconnection (POI) on the other carrier's network. A carrier could designate more than one POI but could not be required to do so. Interconnection would result in the termination of a competing carrier's traffic at at least the same level of service quality that the incumbent LEC provides for terminating its own traffic, without any additional charge to the competing carrier to obtain that level of service. MCI comments at 40-46.

[455] NEXTLINK comments at 19.

and claim that these issues are best resolved through negotiation and arbitration.[456] Several commenters urge the Commission to adopt a rule that only requires that terms and conditions for interconnection points be nondiscriminatory.[457] BellSouth argues that longstanding nondiscrimination reporting requirements have never revealed a problem in the area of installation, maintenance, and repair.[458] Bell Atlantic contends that all arrangements provided by the incumbent LEC for a competitor should be made reciprocal, because new business buildings or residential developments may have only facilities owned by a new entrant. Absent a reciprocity requirement, Bell Atlantic contends that incumbent LECs could be at a competitive disadvantage in competing for those customers. Bell Atlantic also argues that reciprocal interconnection will put a check on potentially unrealistic unbundling requests.[459]

3. Discussion

216. We conclude that minimum national standards for just, reasonable, and nondiscriminatory terms and conditions of interconnection will be in the public interest and will provide guidance to the parties and the states in the arbitration process and thereafter. We believe that national standards will tend to offset the imbalance in bargaining power between incumbent LECs and competitors and encourage fair agreements in the marketplace between parties by setting minimum requirements that new entrants are guaranteed in arbitrations. Negotiations between an incumbent and a new entrant differ from commercial negotiations in a competitive market because new entrants are dependent solely on the incumbent for interconnection.

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[456] *See, e.g.*, Ameritech comments at 16-17; BellSouth comments at 20; USTA comments at 18; GTE comments at 21; SNET comments at 14; Alabama Commission comments at 15; California Commission comments at 20; Oregon Commission comments at 26-27; GVNW comments at 15; MECA comments at 25; Ohio Consumers' Counsel comments at 12 (an effective complaint procedure should be adopted rather than overly specific guidelines). The Ohio Commission and PacTel state that performance standards governing installation, maintenance and repair are unnecessary. PacTel contends that states and industry fora such as the Ordering and Billing Forum (OBF) can establish the necessary rules without Commission intervention. PacTel comments at 29; Ohio Commission comments at 26.

[457] *See, e.g.*, Bell Atlantic comments at 31; BellSouth comments at 20-21; SBC comments at 37; GTE reply at 11; California Commission comments at 20; District of Columbia Commission comments at 18-19; Ohio Consumers' Counsel comments at 12.

[458] BellSouth comments at 20-21; *see also* Bell Atlantic comments at 31 (provisioning interconnection and unbundled elements for new entrants is complicated and requires more work than provisioning simple dial tone; the Commission should not mandate that LECs provide interconnection and unbundled elements using the appropriate installation, service, and maintenance intervals that apply to LEC customers and services); Rural Tel. Coalition comments at 32-33 (service intervals for small and rural LECs with respect to provision of interconnection should only be equal to those which the LEC achieves for itself).

[459] Bell Atlantic comments at 32.

217. Section 202(a) of the Act states that "[i]t shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, . . . facilities, or services for or in connection with like communication service . . . by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person."[460] By comparison, section 251(c)(2) creates a duty for incumbent LECs "to provide . . . any requesting telecommunications carrier, interconnection with a LEC's network on rates, terms, and conditions that are just, reasonable, and nondiscriminatory."[461] The nondiscrimination requirement in section 251(c)(2) is not qualified by the "unjust or unreasonable" language of section 202(a). We therefore conclude that Congress did not intend that the term "nondiscriminatory" in the 1996 Act be synonymous with "unjust and unreasonable discrimination" used in the 1934 Act, but rather, intended a more stringent standard.

218. Given that the incumbent LEC will be providing interconnection to its competitors pursuant to the purpose of the 1996 Act, the LEC has the incentive to discriminate against its competitors by providing them less favorable terms and conditions of interconnection than it provides itself. Permitting such circumstances is inconsistent with the procompetitive purpose of the Act. Therefore, we reject for purposes of section 251, our historical interpretation of "nondiscriminatory," which we interpreted to mean a comparison between what the incumbent LEC provided other parties in a regulated monopoly environment. We believe that the term "nondiscriminatory," as used throughout section 251, applies to the terms and conditions an incumbent LEC imposes on third parties as well as on itself. In any event, by providing interconnection to a competitor in a manner less efficient than an incumbent LEC provides itself, the incumbent LEC violates the duty to be "just" and "reasonable" under section 251(c)(2)(D). Also, incumbent LECs may not discriminate against parties based upon the identity of the carrier (*i.e.*, whether the carrier is a CMRS provider, a CAP, or a competitive LEC). As long as a carrier meets the statutory requirements, as discussed in this section, it has a right to obtain interconnection with the incumbent LEC pursuant to section 251(c)(2).

219. We identify below specific terms and conditions for interconnection in discussing physical or virtual collocation (*i.e.*, two methods of interconnection).[462] We conclude here, however, that where a carrier requesting interconnection pursuant to section 251(c)(2) does not carry a sufficient amount of traffic to justify separate one-way trunks, an incumbent LEC must accommodate two-way trunking upon request where technically feasible. Refusing to

[460] 47 U.S.C. § 202(a).

[461] 47 U.S.C. § 251(c)(2)(D).

[462] *See infra*, Section VI.

provide two-way trunking would raise costs for new entrants and create a barrier to entry. Thus, we conclude that if two-way trunking is technically feasible, it would not be just, reasonable, and nondiscriminatory for the incumbent LEC to refuse to provide it.

220. Finally, as discussed below,[463] we reject Bell Atlantic's suggestion that we impose reciprocal terms and conditions on incumbent LECs and requesting carriers pursuant to section 251(c)(2). Section 251(c)(2) does not impose on non-incumbent LECs the duty to provide interconnection. The obligations of LECs that are not incumbent LECs are generally governed by sections 251(a) and (b), not section 251(c). Also, the statute itself imposes different obligations on incumbent LECs and other LECs (*i.e.*, section 251(b) imposes obligations on all LECs while section 251(c) obligations are imposed only on incumbent LECs). We do note, however, that 251(c)(1) imposes upon a requesting telecommunications carrier a duty to negotiate the terms and conditions of interconnection agreements in good faith. We also conclude that MCI's POI proposal, permitting interconnecting carriers, both competitors and incumbent LECs, to designate points of interconnection on each other's networks, is at this time best addressed in negotiations and arbitrations between parties.[464] We believe that the record on this issue is not sufficiently persuasive to justify Commission action at this time. As market conditions evolve, we will continue to review and revise our rules as necessary.

H. Interconnection that is Equal in Quality

1. Background

221. Section 251(c)(2)(C) requires that the interconnection provided by an incumbent LEC be "at least equal in quality to that provided by the [incumbent LEC] to itself or to any subsidiary, affiliate, or any other party to which the carrier provides interconnection."[465] In the NPRM, we sought comment on how to determine whether interconnection is "equal in quality."

2. Comments

[463] *See infra*, Section XI.A.

[464] Of course, requesting carriers have the right to select points of interconnection at which to exchange traffic with an incumbent LEC under section 251(c)(2).

[465] 47 U.S.C. § 251(c)(2)(C).

222. MFS claims that the incumbent LEC should provide to everyone the highest grade service it makes available to anyone, including neighboring non-competing LECs.[466] MFS also claims that traffic exchange facilities between incumbent LECs and competitors should be designed to meet at least the same technical criteria and grade of service standards (*e.g.*, probability of blocking in peak hours and transmission standards) as used by the incumbent for the inter-office trunks used in its network.[467] Other parties claim that any criteria established by the Commission should not be overly detailed and quantitative or microscopic.[468] The Pennsylvania Commission suggests that "equal in quality" should mean interconnection that is virtually identical to that received by the incumbent LEC itself or its affiliate with no noticeable differences between the two to the end-user.[469] Nortel claims that the definition of "equal in quality" should recognize differences across technologies.[470]

223. Some parties argue that no national standards for "equal in quality" are necessary, and that this determination is best left to a case-by-case determination.[471] GTE claims that it should be acceptable for states to define equal in quality in terms of perception by the end user.[472]

3. Discussion

224. We conclude that the equal in quality standard of section 251(c)(2)(C) requires an incumbent LEC to provide interconnection between its network and that of a requesting carrier at a level of quality that is at least indistinguishable from that which the incumbent provides itself, a subsidiary, an affiliate, or any other party. We agree with MFS that this duty requires incumbent LECs to design interconnection facilities to meet the same technical

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[466] MFS comments at 17 (even if higher grade service is offered to a non-competing LEC, the incumbent LEC must offer this service to competitors); Intermedia comments at 4.

[467] MFS comments at 17.

[468] *See, e.g.*, Ameritech comments at 17; Pennsylvania Commission comments at 21; Ohio Consumers' Counsel comments at 13.

[469] Pennsylvania Commission comments at 21.

[470] Nortel comments at 9.

[471] *See, e.g.*, BellSouth comments at 22; USTA comments at 18; GTE comments at 22; Citizens Utilities comments at 11; Alabama Commission comments at 16; Ohio Consumers' Counsel comments at 13 (dispute resolution process should ultimately decide the success or failure of quality-oriented requirements).

[472] GTE comments at 22.

criteria and service standards, such as probability of blocking in peak hours and transmission standards, that are used within their own networks. Contrary to the view of some commenters, we further conclude that the equal in quality obligation imposed by section 251(c)(2) is not limited to the quality perceived by end users. The statutory language contains no such limitation, and creating such a limitation may allow incumbent LECs to discriminate against competitors in a manner imperceptible to end users, but which still provides incumbent LECs with advantages in the marketplace (*e.g.*, the imposition of disparate conditions between carriers on the pricing and ordering of services).

225. We also note that section 251(c)(2) requires interconnection that is "at least" equal in quality to that enjoyed by the incumbent LEC itself. This is a minimum requirement. Moreover, to the extent a carrier requests interconnection of superior or lesser quality than an incumbent LEC currently provides, the incumbent LEC is obligated to provide the requested interconnection arrangement if technically feasible. Requiring incumbent LECs to provide upon request higher quality interconnection than they provide themselves, subsidiaries, or affiliates will permit new entrants to compete with incumbent LECs by offering novel services that require superior interconnection quality. We also conclude that, as long as new entrants compensate incumbent LECs for the economic cost of the higher quality interconnection,[473] competition will be promoted.[474]

[473] *See infra*, Section VII.

[474] *See also* Section VII.E. (discussion of accommodation of interconnection).

V. ACCESS TO UNBUNDLED NETWORK ELEMENTS

A. Commission Authority to Identify Unbundled Network Elements

1. Background

226. Section 251(c)(3) imposes a duty on incumbent LECs to "provide, to any requesting telecommunications carrier for the provision of a telecommunications service, nondiscriminatory access to network elements on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just, reasonable, and nondiscriminatory in accordance with the terms and conditions of the agreement and the requirements of this section and section 252."[475] This section also requires incumbent LECs to provide these elements "in a manner that allows requesting carriers to combine such elements in order to provide such telecommunications service."[476]

227. Section 251(d)(1) provides that "the Commission shall complete all actions necessary to establish regulations to implement the requirements of" section 251 by August 8, 1996.[477] Section 251(d)(2) further provides that, "[i]n determining what network elements should be made available for purposes of subsection (c)(3), the Commission shall consider, at a minimum, whether (A) access to such network elements as are proprietary in nature is necessary; and (B) the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[478]

228. In the NPRM, we sought comment on our tentative conclusion that the 1996 Act requires the Commission to identify network elements that incumbent LECs are required to make available to requesting carriers on an unbundled basis under section 251(c)(3).[479]

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[475] 47 U.S.C. § 251(c)(3).

[476] *Id.*

[477] *Id.* at § 251(d)(1).

[478] *Id.* at § 251(d)(2).

[479] NPRM at para. 77.

2. Comments

229. The majority of parties who commented on this issue, including IXCs, potential local competitors, the Department of Justice, state commissions, incumbent LECs, cable interests, and NARUC, agree with our tentative conclusion that sections 251(d)(1) and 251(d)(2) obligate the Commission to identify network elements for purposes of subsection (c)(3).[480] BellSouth, in contrast, interprets section 251(c)(3) as requiring the Commission to identify network elements only when a state commission has failed to carry out its responsibilities under section 252, and the Commission assumes those responsibilities under section 252(e)(5).[481]

3. Discussion

230. We affirm our tentative conclusion in the NPRM that the 1996 Act requires the Commission to identify network elements that incumbent LECs must offer requesting carriers on an unbundled basis under section 251(c)(3). Section 251(d)(1) directs the Commission to establish rules implementing the requirements of section 251(c)(3). Further, section 251(d)(2) contemplates that, pursuant to this direction, the Commission will identify unbundled network elements. We conclude that neither the language in section 251(d), nor any other part of the 1996 Act, is reasonably susceptible to the interpretation advanced by BellSouth that our obligation to identify unbundled network elements arises only when we act under section 252(e)(5).

B. National Requirements for Unbundled Network Elements

1. Background

231. In the NPRM, we noted Congress's view that, when new entrants begin providing services in local telephone markets, it is unlikely they will own network facilities that completely duplicate those of incumbent LECs because of the significant investment and time required to build such facilities.[482] The statutory requirement imposed on incumbent LECs to provide access to unbundled network elements will permit new entrants to offer competing local services by purchasing from incumbents, at cost-based prices, access to

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[480] *See, e.g.*, AT&T comments at 3-16, reply at 16; MFS comments at 36; USTA comments at 20-22; Sprint comments at 21-22; Cable & Wireless comments at 17-19; Ameritech comments at 34; District of Columbia Commission comments at 21-22; ALTS comments at 24-26; NCTA comments at 35-40; DoJ comments at 8-15; TDS comments at 5-6; TCC comments at 11-13; Hyperion reply at 5; Minnesota Commission reply at 8; *accord* GTE comments at 24; NARUC comments at 32.

[481] BellSouth comments at 26-30.

[482] NPRM at para. 75 n.103 *citing* (Joint Explanatory Statement at 148).

elements which they do not already possess, unbundled from those elements that they do not need.[483]

232. It is possible that there will be sufficient demand in some local telephone markets to support the construction of competing local exchange facilities that duplicate most or even all of the elements of an incumbent LEC's network. In these markets new entrants will be able to use unbundled elements from the incumbent LEC to provide services until such time as they complete the construction of their own networks, and thus, no longer need to rely on the facilities of an incumbent to provide local exchange and exchange access services. It is also possible, however, that other local markets, now and even into the future, may not efficiently support duplication of all, or even some, of an incumbent LEC's facilities. Access to unbundled elements in these markets will promote efficient competition for local exchange services because, under the scheme set out in the 1996 Act, such access will allow new entrants to enter local markets by obtaining use of the incumbent LECs' facilities at prices that reflect the incumbents' economies of scale and scope.[484]

233. In the NPRM, we tentatively concluded that the Commission should identify a minimum number of elements that incumbent LECs must make available to requesting carriers on an unbundled basis.[485] We further tentatively concluded that section 252(e)(3) preserves a state's authority, during arbitration, to impose additional unbundling requirements beyond those we specify, as long as such requirements are consistent with the 1996 Act and our regulations.[486] Finally, we tentatively concluded that we have authority to identify additional or different unbundling requirements in the future, as we learn about changes in technology, the innovation of new services, and the necessities of competition.[487]

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[483] NPRM at paras. 75-76.

[484] For a further discussion of the differences between entry into local markets through access to unbundled elements and resale, *see infra*, Section V.H.

[485] NPRM at para. 77.

[486] NPRM at para. 78 and nn.105 & 106. Section 252(e) discusses a state commission's obligations regarding the approval or rejection of agreements between incumbent LECs and requesting telecommunications carriers for interconnection, services or network elements. Subparagraph (3) of this section specifically provides that a state commission is not prohibited "from establishing or enforcing other requirements of State law in its review of an agreement," as long as such requirements do not violate the terms of the statute. 47 U.S.C. § 252(e)(3). We further note that under section 252(f)(2) states may impose additional unbundling requirements during review of BOC statements of generally available terms and conditions. Section 252(f)(2) states that "(e)xcept as provided in section 253, nothing in this section shall prohibit a State commission from establishing or enforcing other requirements of State law in its review of such statement . . ." 47 U.S.C. § 252(f)(2).

[487] NPRM at para. 77.

2. Comments

234. A majority of the commenters addressing this issue support our tentative conclusion that we should identify a minimum list of network elements that incumbent LECs must offer upon request.[488] These commenters argue that, absent national rules, negotiations conducted under section 252 will not proceed as Congress intended, because incumbent LECs have no incentive to provide new entrants with facilities that will be used to compete against them.[489] They contend that a national list of required unbundled elements will hasten the development of local competition and decrease the costs of entry into local telephone markets.[490] For example, they argue that national unbundling requirements will allow carriers entering local markets on a regional or national scale to take advantage of economies of scale

[488] *See, e.g.*, AT&T comments at 3-18; MFS comments at 36; Sprint comments at 21-22; Time Warner comments at 44-45; Cable & Wireless comments at 17-19; MCI comments at 12-20; Continental comments at 16; Comcast comments at 5-9, 20-21; SCG comments at 1-4; NCTA comments at 35-39; LDDS comments at 16; TCC comments at 27; Frontier comments at 13; American Mobile Telecomm. Ass'n comments at 1-8; Omnipoint comments at 17-18; SBC comments at 4; NYNEX comments at 61-64; Ameritech comments at 34; U S West comments at 43-50; Ericsson comments at 2-3; District of Columbia Commission comments at 21; Connecticut Commission comments at 9; Ad Hoc Telecommunications Users Committee comments at 13-14; Citizens Utilities comments at 12; Missouri Commission comments at 7; Nortel comments at 9-11; Cincinnati Bell comments at 15; Ohio Consumers' Counsel comments at 17; North Carolina Commission comments at 21; Illinois Commission comments at 35-36; Washington Commission comments at 19; Municipal Utilities reply at 3-6; Joint Consumer Advocates reply at 7; Attorneys General reply at 6; ATSI reply at 8-9; *accord* Wyoming Commission reply at 23-25 (urging the Commission not to adopt a required list of unbundled elements more detailed than that adopted in Wyoming); *see also* Jones Intercable reply at 4-6 (the Commission should include in its national unbundling requirements a waiver procedure whereby incumbent LECs can demonstrate, in state mediations and arbitrations, their inability to meet a particular requirement in a particular situation); SBA comments at 14-15 (unbundling must go beyond three or four basic elements to maximize the ability of small competitors to fashion a competitive service offering); Hyperion comments at 7-8 (if we do not adopt national rules for unbundled elements small competitors could be hurt because they have fewer resources to negotiate agreements than incumbent LECs); TCA comments at 5-6 (rural incumbent LECs should only be required to offer four essential elements to requesting carriers because of differences between rural and urban areas, and in adopting unbundling requirements the Commission should ensure that rural LECs can meet their universal service obligations).

[489] AT&T comments at 3-12, reply at 9; Teleport comments at 5-10; DoJ comments at 8-15; Ad Hoc Telecommunications Users Committee comments at 17-21; Frontier comments at 14; TCC comments at 7-13; ACSI reply at 7 (if private negotiations were adequate there would be no need to create a statutory duty); *accord* PageNet reply at 5-6; Competition Policy Institute reply at 4-9; *see also* IDCMA reply at 8 (national unbundling requirements will facilitate the ability of new entrants to offer innovative services that would not be possible in the context of differing state requirements).

[490] *See, e.g.*, Continental comments at 16; Comcast comments at 20-22; DoJ comments at 8-15; Cable & Wireless comments at 17-19; TCC comments at 7-13; AT&T comments at 3-12; MCI comments at 4-6; Omnipoint comments at 17-18; ITIC comments at 2-5; Ind. Cable & Telecomm. Ass'n reply at 13; GST reply at 3-6; LDDS comments at 28; *accord, e.g.*, Ohio Commission comments at 31.

in network design,[491] diminish the likelihood of litigation over section 251(c)(3)'s requirements,[492] and provide the financial community with greater certainty as it assesses new entrants' business plans, thus enhancing the ability of new entrants to raise capital at affordable rates.[493]

235. Some commenters suggest that we interpret section 251(c)(3) in a way that maximizes unbundling by requiring incumbent LECs to provide all elements for which unbundling is technically feasible.[494] R. Koch argues that a detailed list of unbundled network elements will enable small entities to obtain the right combination of elements to allow them to offer specialized services.[495] Others suggest that we adopt national rules from which the states could deviate to address state-specific concerns. Parties contend that adopting such an approach (variously titled "safe harbors" or "preferred outcomes") would overcome the disincentives of incumbent LECs to provide network elements to competitors, and would allow states to pursue policies that promote competition more aggressively than the 1996 Act requires.[496] NTIA argues that minimum unbundling requirements would be underinclusive,

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[491] *See, e.g.*, NCTA comments at 35-39; DoJ comments at 8-15; AT&T comments at 3-18; MCI comments at 4-6; MCI reply at 32; SCG comments at 1-4; Comcast comments at 6; MFS comments at 36; Cable & Wireless comments at 17-19; Continental comments at 16; Omnipoint comments at 17-18; American Mobile Telcomm. Ass'n comments at 1-5; Ohio Commission comments at 30-31; Nortel comments at 9-11; IDCMA reply at 6-7; Attorneys General reply at 6.

[492] *See, e.g.*, DoJ comments at 8-15; MCI comments at 4-6; AT&T comments at 3-12; *accord* IDCMA reply at 4-6.

[493] MCI comments at 4-6; Continental comments at 16; ITIC comments at 2-5.

[494] DoJ comments at 19-20; *accord* Nextel comments at 9; Ad Hoc Telecommunications Users Committee reply at 6; ACTA comments at 18-19 (arguing that the Commission should require incumbent LECs to unbundle all network elements with exceptions handled through a waiver procedure if the LEC can show that such unbundling is anticompetitive or otherwise not in the public interest); *see also* ASCI comments at 32 (incumbent LECs should be required to provide elements that are not required by the Commission or the States).

[495] R. Koch comments at 2.

[496] *See, e.g.*, Teleport comments at 5-10, 33-34; ALTS comments at 2-4; PacTel comments at 40-44 (the Commission should identify a list of unbundled network elements that are sufficient but not mandatory to comply with section 251); PacTel reply at 2; TRACER reply at 5-6; *see also* Texas Commission comments at 14; Florida Commission comments at 16-17 (the Commission should identify categories rather than specific elements); Pennsylvania Commission reply at 8-21 (the Commission should adopt minimum requirements only where necessary; such requirements should be broad enough to accommodate variations among states because of local technical, demographic and geographic differences); Colorado Commission comments at 25 (the Commission should adopt recommendations for required network elements, and allow the states to identify them and experiment); Rural Tel. Coalition reply at 5 (the Commission should provide guidance to the states rather than imposing detailed unbundling requirements, which would not be consistent with the deregulatory objectives of the 1996 Act); Competition Policy Institute reply at 9; Alaska Tel. Ass'n comments 2-3.

but detailed unbundling rules would provide insufficient flexibility to the states. NTIA thus recommends that the Commission require incumbent LECs to unbundle five different network elements, and mandate that the states require further unbundling consistent with local conditions.[497]

236. BellSouth, U S West, SNET and COMAV argue against the Commission's identification of a minimum list of required unbundled network elements. These parties contend that the provision of unbundled elements should be left entirely to parties in voluntary negotiations in order to accommodate state variations and to avoid requests for elements that competitors do not need, but nevertheless request in an effort to raise incumbent LECs' costs. These parties contend that national unbundling requirements would: dampen technological development because minimum requirements would be set at the lowest common denominator, retard the development of competition by complicating the regulatory review process, and curtail the incentives of incumbent LECs to develop new technologies and services.[498] Maine Commission, *et al.*, Colorado Independent Telephone Association, Home Telephone Company, the Rural Telephone Coalition, and Illinois Independent Telephone Association argue that national unbundling requirements would be unworkable because of technological, demographic and geographic variations among states. They contend that such rules would be particularly harmful to rural areas, and rural incumbent LECs, and that states must have flexibility to determine unbundling requirements that address state-specific concerns.[499]

237. GVNW and the Minnesota Independent Coalition argue that national unbundling requirements imposed on small incumbent LECs should differ from those imposed on large, urban incumbent LECs because of differences in networks and operational procedures.[500] The Rural Telephone Coalition contends that unbundling requirements for small and rural LECs should be limited "to those instances where it is technically feasible, specifically needed by a competitor and economically reasonable."[501]

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[497] NTIA reply at 7-14.

[498] BellSouth comments at 16-19, 30-34; SNET comments at 18-24; U S West comments, Harris/Yao Report at 17; *see also* USTA reply at 10-13 (to encourage facilities-based competition the Commission should implement section 251(c)(3) in a way that provides parties with maximum flexibility); COMAV comments at 20 (because there is no clear definition of a network element, parties should be left to negotiate for what they want).

[499] Maine Commission, *et al.* comments at 2-10; Colorado Ind. Tel. Ass'n comments at 2; Home Tel. comments at 1-2; Illinois Ind. Tel. Ass'n comments at 1-2; *accord* Pennsylvania Commission reply at 15-16; Rural Tel. Coalition comments at 31-33.

[500] GVNW comments at 4-15; Minn. Ind. Coalition comments at 6-7.

[501] Rural Tel. Coalition comments at 31-33; *see also* GVNW comments at 21.

238. A broad range of parties support our tentative conclusion that states may impose additional unbundling requirements beyond those we specify as long as such requirements are consistent with the 1996 Act and our regulations.[502] A number of parties, including IXCs, state commissions, cable operators, CAPs, and new entrants, support our tentative conclusion that the Commission can establish additional or different unbundling requirements in the future as services, technology, and the needs of competing carriers evolve.[503] The Connecticut and Wyoming Commissions, in contrast, oppose this tentative conclusion. They argue that states should consider future unbundling requirements because they are more familiar with local networks and thus, will be able to address feasibility issues more efficiently.[504]

239. Yet another group of commenters, including incumbent LECs and state commissions, contend that future unbundling requirements should be determined by parties through voluntary negotiations.[505] Some argue that such negotiations should proceed under a Commission-mandated bona fide request (BFR) process.[506] USTA suggests that this process should include, for example, requirements regarding the timeliness of LEC responses to

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[502] *See, e.g.*, TCC comments at 11-13, 34; NARUC comments at 32; Texas Commission comments at 15-16; Cable & Wireless comments at 17-19; MCI comments at 12-20; AT&T comments at 12-18; District of Columbia Commission comments at 21; ALTS comments at 24-26; USTA comments at 23; Colorado Commission comments at 24; Sprint comments at 21-22; ACSI comments at 32-34; CompTel comments at 32; Alabama Commission comments at 18; Oregon Commission comments at 24; LDDS comments at 28; GCI comments at 11; Municipal Utilities comments at 28; Ohio Consumers' Counsel comments at 17; Telecommunications Resellers Ass'n comments at 32; TIA comments at 9; TDS comments at 13-14; California Commission comments at 26; Illinois Commission comments at 35-36; Washington Commission comments at 19; Citizens Utilities comments at 12; Nortel comments at 10; Wyoming Commission comments at 23-25; *accord* Ohio Commission comments at 30-31 (it must be clear in whatever forum a BOC request for interexchange authority is reviewed that BOCs must comply with the state unbundling requirements).

[503] AT&T comments at 15-18; Texas Commission comments at 14-15; MCI comments at 12-20; Continental comments at 19; ALTS comments at 24-26; Pennsylvania Commission comments at 23; LDDS comments at 28; North Carolina Commission comments at 22; SBC comments at 4, 31; Oregon Commission comments at 2; Cable & Wireless comments at 17-19; Comcast comments at 19-21; *accord* CompTel comments at 40 (Commission should establish expedited procedures to permit carriers to request that the Commission identify additional elements); Sprint comments at 21-22 (future unbundling requirements can be identified both by the Commission and the states); NCTA comments at 37-38 (Commission should not leave to negotiations the identification of additional unbundled elements); TCC comments at 34 (unless the Commission states that it can adopt further unbundling requirements in the future, incumbent LECs will claim they need only provide the elements originally identified by the Commission).

[504] Connecticut Commission comments at 9; Wyoming Commission comments at 23-25.

[505] *See, e.g.*, Ameritech comments at 34-35; NYNEX comments at 61-64; Bell Atlantic comments at 15-20; ACSI comments at 33; USTA comments at ii; Ohio Commission comments at 32; GTE comments at 28 (impossible to determine in advance every element for which it is technically feasible to unbundle because such a determination must consider the service for which the element will be used and other issues); SBC reply at 18-19; New Hampshire Commission, *et al.* reply at 23.

[506] *See, e.g.*, Ameritech comments at 34-35; ASCI comments at 33; Ohio Commission comments at 32; SBC reply at 18-19.

requests, and commitments by requesting carriers to purchase requested elements and bear the cost of developmental efforts.[507] Bell Atlantic and SBC argue that a BFR process would clarify the duties of incumbent LECs and requesting carriers so that neither engage in gamesmanship,[508] prohibit sham requests intended to delay BOC entry into the in-region, interLATA market,[509] assist arbitrations by requiring the development of a record before the arbitrations commence,[510] and eliminate waste caused by regulatory requirements to unbundle "theoretical network components."[511]

240. A number of potential local competitors oppose identification of unbundled elements in the future by means of voluntary negotiations and a BFR process. In addition, they oppose the criteria offered by a number of incumbent LECs that would be used to identify future unbundling requirements in the context of the BFR process.[512] For example, AT&T argues that the factors in the BFR process proposed by USTA would impose anticompetitive reciprocity requirements and delays.[513] MCI and Sprint oppose USTA's proposal because it would require new entrants to commit to purchasing elements before they know the terms, including prices, under which the LEC will provide such elements.[514] MCI contends that, in a BFR process, LECs should be required to provide an up-to-date inventory of facilities with all information necessary to determine technical feasibility. Conversely, Sprint argues that it is reasonable to ask new entrants to provide technical information and projected demand quantities.[515]

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[507] USTA comments at 14-16.

[508] Both Bell Atlantic and SBC assert that they have developed items for carriers that were never actually ordered. Bell Atlantic comments at 17-20; SBC reply at 18-19.

[509] Bell Atlantic comments at 17-20.

[510] Bell Atlantic comments at 17-20; Bell Atlantic reply at 7.

[511] Bell Atlantic comments at 17-20; Bell Atlantic reply at 7.

[512] CompTel comments at 41; AT&T reply at 16; MCI reply at 23-30; LDDS reply at 11-12; ALTS reply at 32-34; Sprint reply at 18; Hyperion reply at 5-6; *see also* CFA/CU reply at 22.

[513] AT&T reply at 16.

[514] MCI reply at 23-30; Sprint reply at 18.

[515] MCI reply at 23-30; Sprint reply at 18.

3. Discussion

241. We adopt our tentative conclusion and identify a minimum list of unbundled network elements that incumbent LECs must make available to new entrants upon request. We believe the procompetitive goals of section 251(c)(3) will best be achieved through the adoption of such a list. As discussed above,[516] we believe that negotiations and arbitrations will best promote efficient, rapid, and widespread new entry if we establish certain minimum national unbundling requirements. As the Department of Justice argues, there is "no basis in economic theory or in experience to expect incumbent monopolists to quickly negotiate arrangements to facilitate disciplining entry by would-be competitors, absent clear legal requirements to do so."[517] Ad Hoc Telecommunications Users Committee notes that "[h]istorically, the [incumbent LECs] have had strong incentives to resist, and have actively resisted, efforts to open their networks to users, competitors, or new technology-driven applications of network technology."[518]

242. National requirements for unbundled elements will allow new entrants, including small entities, seeking to enter local markets on a national or regional scale to take advantage of economies of scale in network design. If fifty states were to establish different unbundling requirements, new entrants, including small entities, could be denied the benefits of scale economies in obtaining access to unbundled elements. National requirements will also: reduce the number of issues states must consider in arbitrations, thereby facilitating the states' ability to conduct such proceedings; reduce the likelihood of litigation regarding the requirements of section 251(c)(3) and the costs associated with such litigation; and provide financial markets with greater certainty in assessing new entrants' business plans, thus enhancing the ability of new entrants, including small entities, to raise capital. In addition, to the extent the Commission assumes a state's arbitration authority under section 252(e)(5), national requirements for unbundled elements will help the Commission to conclude such proceedings expeditiously.[519]

243. We reject the alternative option of developing an exhaustive list of required unbundled elements, to which states could not add additional elements, on the grounds that

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[516] *See supra*, Section V.B.

[517] DoJ comments at 8-15; *accord* Ad Hoc Telecommunications Users Committee comments at 17-21 (incumbent monopolists in the telecommunications industry have a long history of resisting the facilitation of competition, noting experiences with customer premises equipment (CPE) interconnection, local exchange access for long distance carriers, and the FCC's *Computer II* and *Computer III* proceedings).

[518] Ad Hoc Telecommunications Users Committee comments at 17; *see also infra*, Section VII.

[519] *See supra*, Sections II.A, II.B.

such a list would not necessarily accommodate changes in technology, and it would not provide states the flexibility they need to deal with local conditions.

244. We also reject the proposal advanced by several parties that we should adopt non-binding national guidelines for unbundled elements that states would not be required to enforce. The parties asserting that differences between incumbent LEC networks militate against the adoption of national standards provide few, if any, specific examples of what those differences are. In addition, they fail to articulate persuasively why those differences are significant enough to weigh against the adoption of national requirements.[520] Accordingly, and as previously discussed,[521] we conclude that any differences that may exist among states are not sufficiently great to overcome the procompetitive benefits that would result from establishing a minimum set of binding national rules.[522] Moreover, we believe the authority granted the states in section 252(e)(3), as well as our existing rules which set forth a process by which incumbent LECs can request a waiver of the requirements we adopt here, will provide the necessary flexibility in our rules to permit states and parties to accommodate any truly unique state conditions that might exist.[523] Accordingly, we adopt our tentative conclusion that states may impose additional unbundling requirements pursuant to section 252(e)(3), as long as such requirements are consistent with the 1996 Act and our regulations.

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[520] The Florida Commission argues that we should not require incumbent LECs to offer a 4-wire ISDN loop as an unbundled element because some incumbents in Florida do not offer ISDN. Florida Commission comments at 16-17. Our rules accommodate the concern raised by the Florida Commission because they require requesting carriers to pay for the costs of obtaining access to unbundled network elements. Accordingly, if a requesting carrier seeks a 4-wire ISDN loop from an incumbent LEC that does not employ such an element, the requesting carrier will have to pay for it pursuant to our pricing rules. *See infra*, Section VII. Maine Commission *et. al.* argues generally that embedded networks have evolved over time and most network architectures are different. *See* Maine Commission *et. al.* comments at 2-4. They do not explain, however, why national rules could not accommodate such differences. PacTel argues that local loops may be made of copper or fiber optics, or they may be digital or analog, and thus, the Commission cannot determine the elements that should be unbundled without dictating network technologies. PacTel comments at 42-44. We do not believe that the adoption of national rules identifying a minimum list of unbundled network elements will lead to regulation determining network architectures. To the contrary, our rules will provide new entrants with the opportunity to obtain access to a number of different variants of a particular element, and thus they will facilitate the ability of the market to dictate network architectures. For example, in this order we identify a number of different types of local loops as network elements. *See infra*, Section V.J. Incumbent LECs will be required to provision such elements only if they are requested by new entrants. It is unlikely that new entrants will request and pay for elements unless they believe that there is likely to be some market demand for the services that can be provided over such elements.

[521] *See supra*, Sections II.A & II.B.

[522] *See* DoJ comments at 8-15 (the differences between states are not significant enough to "militate against" national requirements); AT&T comments at 14-18 (there are no conditions unique to one state, hence, all variations can be accommodated in national rules that include a waiver process for unusual conditions.)

[523] We further observed in the NPRM that under the voluntary negotiation paradigm set out in section 252, parties to such negotiations can agree to provide unbundled network elements that differ from those identified by the Commission. *See* NPRM at para 78 (*citing* 47 U.S.C. § 252(a)).

This conclusion is consistent with the statement in section 252(e)(3) that "nothing in this section shall prohibit a State commission from establishing or enforcing other requirements of State law in its review of an agreement."[524]

245. We find the arguments presented by parties opposing national rules for unbundled elements unpersuasive especially in light of the 1996 Act's strong procompetitive goals. For example, in light of the incumbent LECs' disincentives to negotiate with potential competitors, we believe national rules will promote competition by making the bargaining strength of potential competitors, including small entities, more equal. We are not persuaded that national rules will discourage incumbent LECs from developing new technologies and services; to the contrary, based on our experience in other telecommunications markets, we believe that competition will stimulate innovation by incumbent LECs. We also believe that any failure of incumbent LECs to develop new technologies or services would have a less significant adverse effect on competition in local exchange markets than a failure to adopt national rules. Nor is it likely that new entrants will seek unnecessary elements merely to raise incumbents' costs because such new entrants must pay the costs associated with unbundling. In addition, the pricing standard of section 252(d)(1)(B), which allows incumbent LECs to receive not only their costs but also a reasonable profit on the provision of unbundled elements, should further alleviate concerns regarding sham requests.[525]

246. We adopt our tentative conclusion that, in addition to identifying unbundled network elements that incumbent LECs must make available now, we have authority to identify additional, or perhaps different, unbundling requirements that would apply to incumbent LECs in the future. The rapid pace and ever changing nature of technological advancement in the telecommunications industry makes it essential that we retain the ability to revise our rules as circumstances change.[526] Otherwise, our rules might impede technological change and frustrate the 1996 Act's overriding goal of bringing the benefits of competition to consumers of local phone services. For the same reasons that we believe we should adopt national unbundling requirements, as discussed above,[527] we reject the proposal that future unbundling requirements should be determined solely by the parties to voluntary negotiations.

247. Finally, we have considered the economic impact of our rules in this section on small incumbent LECs. For example, we have considered the argument advanced by the

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[524] 47 U.S.C. § 252(e)(3).

[525] *See infra*, Section VII.

[526] *See* 47 U.S.C. § 254(c)(1).

[527] *See also supra*, Sections II.A, II.B.

Rural Telephone Coalition that national unbundling requirements would be unworkable because of technological, demographic and geographic variations between states. We do not adopt the Rural Telephone Coalition's position, however, because we believe that the minimum list we adopt can be applied to a broad range of networks across geographic regions and any differences between incumbent LEC networks in different states are not sufficiently great to overcome the procompetitive benefits of a minimum list of required unbundled network elements. We have also considered the argument advanced by GVNW that unbundling requirements imposed on small incumbent LECs should differ from those imposed on large, urban incumbent LECs because of differences in networks and operational procedures. We reject GVNW's proposal for two reasons. First, some small incumbent LECs may not experience any problems complying with our unbundling rules. Second, we note that section 251(f) of the 1996 Act provides relief to certain small LECs from our regulations implementing section 251.

248. Although we have concluded in this proceeding that we can best achieve the procompetitive aims of the 1996 Act by adopting minimum national unbundling requirements for arbitrated agreements, the 1996 Act envisions that the states will administer those requirements through approval of negotiated agreements and arbitrations.[528] Through arbitrations and review of negotiated agreements the states will add to their significant expertise on issues relating to the provision of access to unbundled network elements. We encourage state commissions to take an active role in evaluating the success or difficulties in implementing any of our requirements. The Commission intends to draw on the expertise developed by the states when we review and revise our rules as necessary.

C. Network Elements

1. Background

249. Section 3(29) of the Communications Act defines the term "network element" to mean both "a facility or equipment used in the provision of a telecommunications service" and "features, functions, and capabilities that are provided by means of such facility or equipment."[529] Such features, functions, and capabilities include "subscriber numbers, databases, signaling systems, and information sufficient for billing and collection or used in the transmission, routing, or other provision of a telecommunications service."[530] The Joint Explanatory Statement explains that "[t]he term 'network element' was included to describe

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[528] 47 U.S.C. § 252.

[529] 47 U.S.C. § 153(29).

[530] *Id.*

the facilities, such as local loops, equipment, such as switching, and the features, functions, and capabilities that a local exchange carrier must provide for certain purposes under other sections of the conference agreement."[531]

250. In the NPRM, we noted that we could identify "network elements" in two ways. First, we could identify a single "network element," and then further subdivide it into additional "elements." Alternatively, we could provide that, once we identify a particular "network element," it cannot be further subdivided. In the NPRM, we asked for comment on these two approaches.[532]

251. We observed in the NPRM that the statutory definition of a "network element" draws a distinction between a "facility or equipment used in the provision of a telecommunications service," and the "service" itself.[533] We asked for comment on the meaning of this distinction in general, with respect to requirements for unbundling, and in connection with specific unbundled elements. We noted that the definition of a network element, *i.e.*, a facility, function, or capability, is not dependent on the particular types of services that are provided by means of the element (*e.g.*, interstate access, intrastate local exchange), and asked whether a carrier purchasing access to an element is obligated, pursuant to the definition, to provide all services typically carried or provided by that element.[534]

2. Comments

252. A number of parties, including potential local competitors and state commissions, support the adoption of a flexible method for identifying network elements. They argue that a flexible method is necessary to accommodate future changes in technology.[535] NYNEX, the Texas Public Utility Counsel, and GVNW contend that, to accommodate such changes, we

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[531] Joint Explanatory Statement at 116.

[532] NPRM at para. 83.

[533] NPRM at para. 51, (*citing* 47 U.S.C. § 153(29)).

[534] NPRM at para. 84.

[535] District of Columbia Commission comments at 21-22; MFS comments at 36; Cable & Wireless comments at 17-19; Ericsson comments at 3; Alabama Commission comments at 19; ACSI comments at 30; Ohio Commission comments at 33; Florida Commission comments at 18; Hyperion comments at 18; GST comments at 16; LDDS comments at 29; Ohio Consumers' Counsel comments at 18; Nextel comments at 8; Time Warner comments at 44-45 (the Commission should identify elements in a way that gives parties maximum flexibility); *but see* Ad Hoc Telecommunications Users Committee comments at 15-16 (define elements narrowly to give maximum flexibility to offer innovative services).

should not define elements in rigid terms, or by specific technologies, but rather by general function.[536]

253. In contrast, PacTel argues that the Commission should not require the unbundling of elements beyond those noted in other parts of the statute, and thus we need not develop a flexible method for identifying network elements.[537] BellSouth contends that, while flexibility is preferable, parties should be able to decide "whatever level of granularity makes sense for them" in voluntary negotiations.[538]

254. A number of parties assert that we should define a network element by its functionality and capabilities, and not as separate services.[539] MCI asserts that elements can be used to provide a number of different services and thus are not service-specific. MCI further argues that elements should include all of their embedded features and functionalities so carriers can use them to provide both existing services that are already offered by incumbent LECs, and new ones that currently are not.[540] GTE contends that incumbent LECs use a wide variety of databases, functions and capabilities in their networks, but the definition of a network element is limited to those databases, functions and capabilities that are employed in the transmission, routing, or other provision of a telecommunications service. Thus, GTE would exclude from the definition features used in conjunction with, but not in the actual provision of, a telecommunications service as well as features used to provide information or other non-telecommunications services.[541]

255. AT&T asserts that vertical features (*i.e.*, custom calling or Custom Local Area Signaling Services ("CLASS")) are network elements because they constitute a function or a capability and are not by nature a jurisdictionally distinct service that can only be provided on

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[536] NYNEX comments at 61-64; GVNW comments at 17-18; Texas Public Utility Counsel comments at 8-9.

[537] PacTel comments at 44-45; *see also* MECA comments at 28 (the Commission should not define network elements flexibly); COMAV comments at 20 (because a network element cannot be defined, the parties should decide what facilities they want during negotiations).

[538] BellSouth comments at 30-31.

[539] BellSouth comments at 30-31,62; MFS comments at 36-37, 65-66; Cable & Wireless comments at 26-27; MCI comments at 27-28; Lincoln Tel. comments at 7; GST comments at 6; Sprint comments at 22-23; Illinois Commission comments at 36-37; *see also* Intermedia comments at 12-13 (the Commission should not draw artificial distinctions between facilities and services as an unbundled element is not useful if it cannot support an end-to-end service).

[540] MCI comments at 27-28; *accord* Sprint comments at 22-23.

[541] GTE comments at 25-27; GTE reply at 16.

either an inter- or intra-state basis.[542] A number of incumbent LECs argue in opposition that vertical features are not physical elements of the incumbent LEC networks, but are retail services. They further argue that, if we allow new entrants to purchase such features as unbundled elements, we would nullify section 251(c)(4).[543] Ameritech also contends that vertical features are often priced significantly above cost, and for this reason carriers should not be allowed to obtain such services as unbundled elements.[544] Sprint claims that electronic interfaces (*e.g.*, administrative databases) used for the provision of unbundled elements can be considered network elements themselves.[545] A number of incumbent LECs, however, variously argue that such administrative databases, operator services, directory assistance, or electronic gateways are not network elements because new entrants do not need access to their features and functions to provide a telecommunications service. Moreover, these parties dispute claims that their features and functions are physical elements of the incumbents' networks. These parties characterize them as services. They further contend that it is not technically feasible or would be prohibitively expensive to provide access to such databases or electronic gateways and that requiring incumbent LECs to provision them as unbundled elements would both risk the security of those systems and reveal proprietary information.[546]

256. Commenters set forth a variety of views on the issue of whether the services or facility distinction requires carriers using an unbundled element to offer all services provided with that element. CompTel and MECA contend that the statute imposes such a requirement.[547] Sprint argues that a carrier purchasing an unbundled switch and loop must provide local exchange and exchange access services.[548] USTA and the Department of Justice contend that carriers must purchase exclusive access to an unbundled loop, and thus, must

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[542] AT&T reply at 15-16.

[543] Ameritech reply at 24 n.38; PacTel reply at 25; Bell Atlantic reply at 6; USTA comments at 23-26; GTE comments at 25-26. Section 251(c)(4) provides that incumbent LECs have the duty "to offer for resale at wholesale rates any telecommunications service that the carrier provides at retail to subscribers that are not telecommunications carriers." 47 U.S.C. § 251(c)(4). For a further discussion of the relationship between sections 251(c)(3) and 251(c)(4), *see infra*, Section V.H.

[544] Ameritech reply at 24 n.38.

[545] Sprint reply at 26.

[546] Ameritech reply at 19-20; U S West reply at 27; USTA reply at 17-18; NYNEX reply at 33-34 (while electronic gateways are not network elements, it is reasonable to request access to them); PacTel reply at 21-22; BellSouth reply at 24-30.

[547] Comptel comments at 24; MECA comments at 31.

[548] Sprint comments at 22-23.

provide all services carried over it.[549] The Department of Justice notes that this interpretation is required by practicality, and is consistent with industry practice at the time the 1996 Act was adopted.[550] The Department of Justice also notes that a local loop is a nontraffic sensitive facility, and thus it would be difficult to apportion the cost of such a facility among a number of different users.[551]

257. In contrast, a number of potential local competitors, as well as the Ohio and Oregon Commissions, contend that, according to the language of the 1996 Act, a carrier is not required to offer all services that an element makes possible. These parties variously argue that such a requirement would be unenforceable and anticompetitive, would stifle creativity in service offerings, and is contrary to the market-based policies inherent in the 1996 Act.[552]

3. Discussion

258. We adopt the concept of unbundled elements as physical facilities of the network, together with the features, functions, and capabilities associated with those facilities. Carriers requesting use of unbundled elements within the incumbent LEC's network seek in effect to purchase the right to obtain exclusive access to an entire facility, or use of some feature, function or capability of that element. For some elements, especially the loop, the requesting carrier will purchase exclusive access to the element for a specific period, such as on a monthly basis. Carriers seeking other elements, especially shared facilities such as common transport, are essentially purchasing access to a functionality of the incumbent's facilities on a minute-by-minute basis. This concept of network elements, as discussed *infra* at section V.G., does not alter the incumbent LEC's physical control or ability or duty to repair and maintain network elements.

259. We conclude that we should identify a particular facility or capability, for example, as a single network element, but allow ourselves and the states (where appropriate) the discretion to further identify, within that single facility or capability, additional required network elements. Thus, for example, in this proceeding, we identify the local loop as a

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[549] USTA comments at 56-66; DoJ comments at 35-47.

[550] DoJ comments at 35-47.

[551] DoJ comments at 35-47.

[552] MCI comments at 27-28; ACTA comments at 17; LDDS comments at 30; MFS comments at 36-37,65-66; Cable & Wireless comments at 26-27; Frontier comments at 9; Ohio Commission comments at 33; Oregon Commission comments at 27; *accord* Citizens Utilities comments at 9.

single network element.[553] We also ask the states to evaluate, on a case-by-case basis, whether to require access to subloop elements, which can be facilities or capabilities within the local loop.[554] We agree with those commenters that argue that identifying a particular facility or capability as single network element, but allowing such elements to be further subdivided into additional elements, will allow our rules (as well as the states) to accommodate changes in technology, and thus better serve the interests of new entrants and incumbent LECs, and the procompetitive purposes of the 1996 Act.[555] We are not persuaded by PacTel's argument that it is unnecessary for our rules to permit the identification of additional elements, beyond those specifically referenced in parts of the 1996 Act, because our rules must conform to the definition of a network element, and they must accommodate changes in technology. Nor are we persuaded by BellSouth that identification of network elements should be left solely to the parties. We reject this approach for the same reasons that led us to adopt national unbundling requirements.[556] Finally, we agree with NYNEX and others that we should not identify elements in rigid terms, but rather by function.

260. We agree with MCI and MFS that the definition of the term network element includes physical facilities, such as a loop, switch, or other node, as well as logical features, functions, and capabilities that are provided by, for example, software located in a physical facility such as a switch.[557] We further agree with MCI that the embedded features and functions within a network element are part of the characteristics of that element and may not be removed from it. Accordingly, incumbent LECs must provide network elements along with all of their features and functions, so that new entrants may offer services that compete with those offered by incumbents as well as new services.

261. The only limitation that the statute imposes on the definition of a network element is that it must be "used in the provision of a telecommunications service."[558] Incumbent LECs provide telecommunications services not only through network facilities that serve as the basis for a particular service, or that accomplish physical delivery, but also through information (such as billing information) that enables incumbents to offer services on

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[553] *See infra*, Section V.J.

[554] *Id.*

[555] *See, e.g.*, District of Columbia Commission comments at 21-22; MFS comments at 36.

[556] *See supra*, Sections II.A, II.B, V.B.

[557] MCI comments at 27-28; MFS comments at 36-37.

[558] 47 U.S.C. § 153(29).

a commercial basis to consumers. Our interpretation of the term "provision" finds support in the definition of the term "network element." That definition provides that the type of information that may constitute a feature or function includes information "used in the transmission, routing or other provision of a telecommunications service."[559] Since "transmission" and "routing" refer to physical delivery, the phrase "or other provision of a telecommunications service" goes beyond mere physical delivery.

262. We conclude that the definition of the term "network element" broadly includes all "facilit[ies] or equipment used in the provision of a telecommunications service," and all "features, functions, and capabilities that are provided by means of such facility or equipment, including subscriber numbers, databases, signaling systems, and information sufficient for billing and collection or used in the transmission, routing, or other provision of a telecommunications service."[560] This definition thus includes, but is not limited to, transport trunks, call-related databases, software used in such databases, and all other unbundled elements that we identify in this proceeding.[561] The definition also includes information that incumbent LECs use to provide telecommunications functions commercially, such as information required for pre-ordering,[562] ordering, provisioning,[563] billing, and maintenance and repair services. This interpretation of the definition of the term "network element" will serve to guide both the Commission and the states in evaluating further unbundling requirements beyond those we identify in this proceeding.

263. We disagree with those incumbent LECs which argue that features that are sold directly to end users as retail services, such as vertical features, cannot be considered elements within incumbent LEC networks.[564] If we were to conclude that any functionality sold directly to end users as a service, such as call forwarding or caller ID, cannot be defined as a network element, then incumbent LECs could provide local service to end users by selling them unbundled loops and switch elements, and thereby entirely evade the unbundling

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[559] *Id.*

[560] *Id.*

[561] *See infra*, V.J.

[562] *See infra*, Section V.J.5, for a definition of pre-ordering services.

[563] The term "provisioning" includes installation.

[564] *See infra*, Section V.J, discussing vertical features and noting that the Illinois Commission has rejected arguments that vertical features cannot be incorporated into network elements.

requirement in section 251(c)(3).[565] We are confident that Congress did not intend such a result. We further reject Ameritech's argument that we should not permit carriers to use unbundled elements to provide services that are priced above cost at retail. We agree with those parties that argue that competition will not develop if we find that supracompetitive pricing is protected by the 1996 Act.[566]

264. Moreover, we agree with those commenters that argue that network elements are defined by facilities or their functionalities or capabilities, and thus, cannot be defined as specific services. A single network element could be used to provide many different services. For example, a local loop can be used to provision inter- and intrastate exchange access services, as well as local exchange services. We conclude, consistent with the findings of the Ohio and Oregon Commissions, that the plain language of section 251(c)(3) does not obligate carriers purchasing access to network elements to provide all services that an unbundled element is capable of providing or that are typically offered over that element.[567] Section 251(c)(3) does not impose any service-related restrictions or requirements on requesting carriers in connection with the use of unbundled elements.

D. Access to Network Elements

1. Background

265. In the NPRM, we observed that section 251(c)(3) requires incumbent LECs to provide "access" to network elements "on an unbundled basis."[568] We interpreted these terms to mean that incumbent LECs must provide carriers with the functionality of a particular element, separate from the functionality of other elements, and must charge a separate fee for each element. We sought comment on this interpretation and any alternative interpretations.[569]

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[565] *See, e.g.*, CompTel reply at 20-22.

[566] *See, e.g.*, DoJ reply at 23-31; CompTel reply at 13-22. For a discussion of the argument that allowing new entrants to purchase vertical features as unbundled elements would nullify section 251(c)(4), *see infra*, Section V.H.

[567] Ohio Commission comments at 33; Oregon Commission comments at 27.

[568] 47 U.S.C. § 251(c)(3).

[569] NPRM at para. 86.

2. Comments

266. A number of parties agree with our interpretation that the phrase "access to network elements on an unbundled basis" means that incumbent LECs must provide access to the functionality of different elements on a separate basis, and must charge separate fees.[570] In contrast, PacTel argues that the 1996 Act does not require the provision of an element's functionality, but merely requires incumbent LECs to provide elements in a way that allows carriers to combine them and offer a telecommunications service. PacTel nevertheless acknowledges that agreements will likely allow for the provision of an element's functionality.[571]

267. Bell Atlantic and USTA argue that "access" to unbundled elements can only be achieved by interconnecting, under the terms of section 251(c)(2), a requesting carrier's facilities to the facilities of the incumbent LEC at a particular point.[572]

3. Discussion

268. We conclude that we should adopt our proposed interpretation that the terms "access" to network elements "on an unbundled basis" mean that incumbent LECs must provide the facility or functionality of a particular element to requesting carriers, separate from the facility or functionality of other elements, for a separate fee. We further conclude that a telecommunications carrier purchasing access to an unbundled network facility is entitled to exclusive use of that facility for a period of time, or when purchasing access to a feature, function, or capability of a facility, a telecommunications carrier is entitled to use of that feature, function, or capability for a period of time. The specified period may vary depending on the terms of the agreement between the incumbent LEC and the requesting carrier. The ability of other carriers to obtain access to a network element for some period of time does not relieve the incumbent LEC of the duty to maintain, repair, or replace the unbundled network element.[573] We reject PacTel's interpretation of the terms quoted above

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[570] BellSouth comments at 34; MFS comments at 41; Cable & Wireless comments at 26-27; MCI comments at 12-20; Ericsson comments at 4; District of Columbia Commission comments at 22; Nextel comments at 8; USTA comments at 26; Colorado Commission comments at 27; Pennsylvania Commission comments at 24-25; GTE comments at 27; Florida Commission comments at 19; GST comments at 19.

[571] PacTel comments at 44-47.

[572] Bell Atlantic comments at 13; USTA comments at 62-63; *see also* GTE comments at 74-79; Letter from Antoinette Cook Bush, Counsel for Ameritech, to William F. Caton, Secretary, FCC, July 10, 1996; *cf.* DoJ comments at 45 (the requirement in section 251(c)(2) that carriers must offer either local exchange or exchange access services does not apply to the carriers offering services using unbundled elements).

[573] We clarify that title to unbundled network elements will not shift to requesting carriers.

because it is inconsistent with our definition of the term network element (*i.e.*, an element includes all features and functions embedded in it). Moreover, to the extent that PacTel's argument suggests that the 1996 Act does not require unbundled elements to be provisioned in a way that would make them useful, we find that its statutory interpretation is inconsistent with the statute's goal of providing new entrants with realistic means of competing against incumbents.

269. We further conclude that "access" to an unbundled element refers to the means by which requesting carriers obtain an element's functionality in order to provide a telecommunications service. Just as section 251(c)(2) requires "interconnection . . . at any technically feasible point," section 251(c)(3) requires "access . . . at any technically feasible point."[574] We conclude, based on the terms of sections 251(c)(2), 251(c)(3), and 251(c)(6), that an incumbent LEC's duty to provide "access" constitutes a duty to provide a connection to a network element independent of any duty imposed by subsection (c)(2). Thus, such "access" must be provided under the rates, terms, and conditions that apply to unbundled elements.

270. Specifically, section 251(c)(6) provides that incumbent LECs must provide "physical collocation of equipment necessary for interconnection *or* access to unbundled network elements."[575] The use of the term "or" in this phrase means that interconnection is different from "access" to unbundled elements. The text of sections 251(c)(2) and (c)(3) leads to the same conclusion. Section 251(c)(2) requires that interconnection be provided for "the transmission and routing of telephone exchange service and exchange access."[576] Section 251(c)(3), in contrast, requires the provision of access to unbundled elements to allow requesting carriers to provide "a telecommunications service."[577] The term "telecommunications service" by definition includes a broader range of services than the terms "telephone exchange service and exchange access."[578] Subsection (c)(3), therefore, allows unbundled elements to be used for a broader range of services than subsection (c)(2) allows for interconnection. If we were to conclude that "access" to unbundled elements under subsection (c)(3) could only be achieved by means of interconnection under subsection (c)(2),

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[574] 47 U.S.C. §§ 251(c)(2), 251(c)(3).

[575] 47 U.S.C. § 251(c)(6) (emphasis added).

[576] 47 U.S.C. § 251(c)(2).

[577] 47 U.S.C. § 251(c)(3).

[578] *See* 47 U.S.C. § 153(16),(46),(47).

we would be limiting, in effect, the uses to which unbundled elements may be put, contrary to the plain language of section 251(c)(3) and standard canons of statutory construction.[579]

E. Standards Necessary to Identify Unbundled Network Elements

1. Background

271. In the NPRM, we raised a number of issues concerning the meaning of technical feasibility in connection with unbundled elements.[580] We also sought comment on the extent to which the Commission should consider the standards set forth in section 251(d)(2) in identifying required unbundled elements, and on how we ought to interpret these standards.[581] Subsection (d)(2) provides that "(i)n determining what network elements should be made available for purposes of subsection (c)(3), the Commission shall consider, at a minimum" the following two standards, "whether (A) access to such network elements as are proprietary in nature is necessary; and (B) the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[582] We further asked about the relationship between the latter standard and the requirement in section 251(c)(3) that carriers be able to use unbundled elements to provide a telecommunications service.[583]

2. Comments

272. Commenters raised two issues in interpreting the standard relating to whether access to proprietary elements is necessary. The first issue relates to whether incumbent LECs are required to provide proprietary information contained in network elements (*e.g.*, Customer Premises Network Information contained in databases); and the second to whether incumbent LECs are required to provide network elements which are proprietary (*e.g.*, elements with proprietary protocols.) As to the first issue, Ameritech, SBC, BellSouth, PacTel, Texas Statewide Telephone Cooperative, Inc. and the Wyoming Commission argue that the Commission should protect proprietary information contained in incumbent LECs'

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[579] *See, e.g.*, DoJ comments at 35-47.

[580] NPRM at paras. 87-88. *See supra*, Section IV.D, for a discussion of these issues.

[581] NPRM at para. 88.

[582] 47 U.S.C. § 251(d)(2).

[583] NPRM at para. 90.

networks.[584] BellSouth and PacTel further argue that we should prohibit access to elements containing proprietary information unless new entrants meet a heavy burden demonstrating need.[585]

273. As to the second issue, a few incumbent LECs argue generally that the Commission should require unbundling of proprietary network elements only under certain limited circumstances.[586] USTA argues that, if we do not grant incumbent LECs the ability to deny their competitors access to proprietary elements, we will stifle the incumbents' incentives to provide innovative services and thereby inhibit competition.[587] PacTel contends that we should not require unbundling of elements with proprietary protocols unless a new entrant demonstrates a heavy burden of need.[588] Ameritech and GTE assert that we should require unbundling of proprietary elements only when the failure to do so would prevent a carrier from offering a service.[589] GTE adds that, if an element is available from other sources, unbundling should not be mandated. Moreover, according to GTE, if incumbent LECs do make proprietary elements available, they should be compensated for the use of their intellectual property.[590] In contrast, the Consumer Federation of America asserts that, if we define proprietary elements broadly and require new entrants to demonstrate need before they may obtain them, we would significantly inhibit new entry.[591]

274. Most BOCs and GTE contend that the general obligation imposed by section 251(c)(3) is limited by section 251(d)(2)'s standard of whether the failure to provide access to network elements would impair the ability of carriers to offer a service. They argue that this standard requires incumbent LECs to provide unbundled elements only where the failure to do

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[584] Ameritech comments at 34; SBC comments at 36-37; Texas Statewide Telephone Cooperative, Inc. comments at 5-6; BellSouth comments at 35; PacTel comments at 40-44; Wyoming Commission at 24-26.

[585] BellSouth comments at 35; PacTel comments at 40-44.

[586] Ameritech comments at 34-35, reply at 11; BellSouth comments at 35; PacTel comments at 40-44; GTE comments at 30-31; GTE reply at 16; *see also* USTA comments at 27-28.

[587] USTA comments at 27-28.

[588] PacTel comments at 40-44, reply at 16-17; *see also* BellSouth comments at 35.

[589] Ameritech comments at 34-35; Ameritech reply at 11; GTE comments at 30-31; GTE reply at 16.

[590] GTE comments at 30-31.

[591] CFA/CU reply at 25; *see also* Letter from Bruce K. Cox, Government Affairs Director, AT&T to William F. Caton, Secretary, FCC, July 11, 1996 (AT&T July 11 *Ex Parte*).

so would prohibit a carrier from providing a service.[592] Commenters offer two different standards by which we may determine whether a carrier may require an incumbent LEC to provide an unbundled element in order for the carrier to offer a service. First, GTE, PacTel and BellSouth argue that unbundling is not required if a carrier can obtain, or provide itself, the requested element on reasonable terms and conditions.[593] The burden of meeting this standard, according to GTE, falls on the requesting carrier.[594] If a carrier fails to meet this standard, but continues to request an element, BellSouth claims, that carrier must meet a heavier burden.[595] Second, PacTel and Ameritech argue that, if a carrier can offer a service by purchasing the underlying service from the incumbent LEC and reselling it, pursuant to section 251(c)(4), the carrier is not impaired in its ability to offer the service. Thus, they argue, new entrants cannot use unbundled elements exclusively to offer the same services that new entrants can obtain from an incumbent LEC under the resale provision.[596]

275. The Department of Justice and Comptel reject the BOCs' argument that the general obligation imposed by section 251(c)(3) is limited by consideration of whether the failure to provide access to an element would impair a carrier's ability to offer a service. They argue that the term "impair" does not mean "prevent," and that we should interpret this standard to mean that a carrier's ability to provide a service is impaired if obtaining an element from a third party is more costly than obtaining that same element from the incumbent. They also dispute the incumbent LECs' argument that the "impair" language in this standard means that new entrants cannot exclusively use unbundled elements to provide the same or similar retail services that an incumbent offers. They argue that, if similarity is enough to prevent the use of unbundled elements, then section 251(c)(3) would be nullified. They further contend that, under the BOCs' theory, incumbents could prevent new entry through the use of unbundled elements by offering unbundled loops, switching, and other elements as retail services.[597] CompTel also argues that this standard refers back to the first standard in section 251(d)(2) and means that incumbents must provide proprietary elements

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[592] BellSouth comments at 31-35; GTE comments at 30-31, GTE reply 16-17; Ameritech comments at 25-33; PacTel comments at 40-44, reply at 16-17; SBC comments at 36-37.

[593] GTE comments at 30-31; PacTel comments at 40-44, reply at 17 n.38; BellSouth comments at 35.

[594] GTE reply at 17.

[595] BellSouth comments at 35.

[596] BellSouth comments at 31-33; Ameritech comments at 25-31; *see infra*, Section V.H, for a further discussion of the relationship between sections 251(c)(3) and 251(c)(4).

[597] *See, e.g.*, DoJ comments at 48-51, reply at 23-31; CompTel reply at 13-22; *see also*, AT&T reply at 13-20.

only if the failure to do so would prevent a requesting carrier from offering a telecommunications service.[598]

276. AT&T argues that the plain language of section 251(c)(3) means that incumbent LECs must provide unbundled elements that new entrants request, and that the factors in section 251(d)(2) are minimum considerations and not threshold requirements.[599] BellSouth and SBC agree that the "at minimum" language in section 251(d)(2) means the Commission can consider other factors not enumerated in the statute in determining what elements incumbent LECs must offer to requesting carriers.[600] Similarly, several commenters suggest that, in determining which elements must be offered, we should consider a number of additional factors, including, for example, whether there is a demonstrable market demand for a particular element.[601]

3. Discussion

277. Sections 251(c)(3) and 251(d)(2) set forth standards the Commission must consider in identifying unbundled network elements that incumbent LECs must make available in connection with arbitrations before state commissions and BOC statements of generally available terms and conditions. These standards guide the unbundling requirements we issue today as well as any different or additional unbundling requirements we may issue in the future. Similarly, the states must follow our interpretation of these standards to the extent they impose additional unbundling requirements during arbitrations or subsequent rulemaking proceedings.

278. Section 251(c)(3) requires incumbent LECs to provide requesting carriers with "nondiscriminatory access to network elements on an unbundled basis at any technically feasible point."[602] We find that this clause imposes on an incumbent LEC the duty to provide all network elements for which it is technically feasible to provide access on an unbundled basis. Because section 251(d)(1) requires us to "establish regulations to implement the

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[598] CompTel comments at 24-25; *see also* AT&T July 11 *Ex Parte*.

[599] *See* AT&T reply at 13-20.

[600] BellSouth comments at 17, 26; SBC comments at 18.

[601] *See, e.g.*, SBC comments at 25-37, 84-99; NYNEX comments at 61-64; Ameritech comments at 34; USTA comments at 23; *see also* Texas Public Utility Counsel comments at 9-11; CBT comments at 15; Nortel comments at 6; U S West comments at 45-47; ASCI comments at 32.

[602] 47 U.S.C. § 251(c)(3).

requirements of" section 251(c)(3), we conclude that we have authority to establish regulations that are coextensive with the duty section 251(c)(3) imposes on incumbent LECs.

279. Section 251(d)(2), however, sets forth standards that do not depend on technical feasibility. More specifically, section 251(d)(2) provides that, in identifying unbundled elements, the Commission shall "consider, at a minimum," whether access to proprietary elements is necessary (the "proprietary standard"), and whether requesting carriers' ability to provide services would be impaired if the desired elements were not provided by an incumbent LEC (the "impairment standard.") Thus, section 251(d)(2) gives us the authority to decline to require incumbent LECs to provide access to unbundled network elements at technically feasible points if, for example, we were to conclude that access to a particular proprietary element is not necessary. To give effect to both sections 251(c)(3) and 251(d)(2), we conclude that the proprietary and impairment standards in section 251(d)(2) grant us the authority to refrain from requiring incumbent LECs to provide all network elements for which it is technically feasible to provide access on an unbundled basis. The authority we derive from section 251(d)(2) is limited, however, by our interpretation of these standards, and this section, as set forth below.

280. We agree with BellSouth, SBC, and others that the plain import of the "at minimum" language in section 251(d)(2) requires us, in identifying unbundled network elements, to "consider" the standards enumerated there, as well as other standards we believe are consistent with the objectives of the 1996 Act. We conclude that the word "consider" means we must weigh the standards enumerated in section 251(d)(2) in evaluating whether to require the unbundling of a particular element.

281. We further conclude that, in evaluating whether to impose additional unbundling requirements during the arbitration process, states must apply our definition of technical feasibility, discussed above in section IV.D. A determination of technical feasibility would then create a presumption in favor of requiring an incumbent LEC to provide the element. If providing access to an unbundled element is technically feasible, a state must then consider the standards set forth in section 251(d)(2), as we interpret them below. Similarly, the Commission will apply this analysis where we must arbitrate specific unbundling issues, under section 252(e)(5), and in future rulemaking proceedings that may consider additional or possibly different unbundling requirements.

282. Section 251(d)(2)(A) requires the Commission and the states to consider whether access to proprietary elements is "necessary." "Necessary" means, in this context, that an element is a prerequisite for competition. We believe that, in some instances, it will be "necessary" for new entrants to obtain access to proprietary elements (*e.g.*, elements with proprietary protocols or elements containing proprietary information), because without such

elements, their ability to compete would be significantly impaired or thwarted.[603] Thus, as an initial matter, we decline to adopt a general rule, as suggested by some incumbents, that would prohibit access to such elements, or make access available only upon a carrier demonstrating a heavy burden of need. We acknowledge that prohibiting incumbents from refusing access to proprietary elements could reduce their incentives to offer innovative services. We are not persuaded, however, that this is a sufficient reason to prohibit generally the unbundling of proprietary elements, because the threat to competition from any such prohibition would far exceed any costs to consumers resulting from reduced innovation by the incumbent LEC.[604] Moreover, the procompetitive effects of our conclusion generally will stimulate innovation in the market, offsetting any hypothetical reduction in innovation by the incumbent LECs.

283. We further conclude that, to the extent new entrants seek additional elements beyond those we identify herein, section 251(d)(2)(A) allows the Commission and the states to require the unbundling of such elements unless the incumbent can prove to a state commission that: (1) the element is proprietary, or contains proprietary information that will be revealed if the element is provided on an unbundled basis; and (2) a new entrant could offer the same proposed telecommunications service through the use of other, nonproprietary unbundled elements within the incumbent's network. We believe this interpretation of section 251(d)(2)(A) will best advance the procompetitive purposes of the 1996 Act. It allows new entrants to obtain proprietary elements from incumbent LECs where they are necessary to offer a telecommunications service, and, at the same time, it gives incumbents the opportunity to argue, before the states or the Commission, against unbundling proprietary elements where a new entrant could offer the same service using other unbundled elements in the incumbent's network. We decline to adopt the interpretation of section 251(d)(2)(A) advanced by some incumbents that incumbent LECs need not provide proprietary elements if requesting carriers can obtain the requested proprietary element from a source other than the incumbent. Requiring new entrants to duplicate unnecessarily even a part of the incumbent's network could generate delay and higher costs for new entrants, and thereby impede entry by competing local providers and delay competition, contrary to the goals of the 1996 Act.

284. We further conclude that, to the extent new entrants do not need access to all the proprietary information contained within an element in order to provide a telecommunications service, the Commission and the states may take action to protect the proprietary information.

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[603] As noted *supra*, Section V.E.2, a number of commenters argue that section 251(d)(2)(A) requires us to protect proprietary information, such as CPNI information, contained in network elements. We intend to treat issues regarding CPNI in our rulemaking proceeding on CPNI information. *Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Customer Information*, CC Docket No. 96-115, Notice of Proposed Rulemaking, FCC 96-221 (rel. May 17, 1996).

[604] In this proceeding, for example, we are requiring incumbent LECs to provide the local switching element which includes vertical features that some carriers contend are proprietary. *See infra*, Section V.J.

For example, to provide a telecommunications service, a new entrant might need access to information about a particular customer that is in an incumbent LEC database. The database to which the new entrant requires access, however, may contain proprietary information about all of the incumbent LECs' customers. In this circumstance, the new entrant should not have access to proprietary information about the incumbent LEC's other customers where it is not necessary to provide service to the new entrant's particular customer. Accordingly, we believe the Commission and the states have the authority to protect the confidentiality of proprietary information in an unbundled network element, such as a database, where that information is not necessary to enable a new entrant to offer a telecommunications service to its particular customer.

285. Section 251(d)(2)(B) requires us to consider whether the failure to provide access to an element would "impair" the ability of a new entrant to provide a service it seeks to offer. The term "impair" means "to make or cause to become worse; diminish in value."[605] We believe, generally, that an entrant's ability to offer a telecommunications service is "diminished in value" if the quality of the service the entrant can offer, absent access to the requested element, declines and/or the cost of providing the service rises. We believe we must consider this standard by evaluating whether a carrier could offer a service using other unbundled elements within an incumbent LEC's network. Accordingly, we interpret the "impairment" standard as requiring the Commission and the states, when evaluating unbundling requirements beyond those identified in our minimum list, to consider whether the failure of an incumbent to provide access to a network element would decrease the quality, or increase the financial or administrative cost of the service a requesting carrier seeks to offer, compared with providing that service over other unbundled elements in the incumbent LEC's network.

286. We decline to adopt the interpretation of the "impairment" standard advanced by most BOCs and GTE. Under their interpretation, incumbent LECs must provide unbundled elements only when the failure to do so would prevent a carrier from offering a service. We also reject the related interpretations that carriers are not impaired in their ability to provide a service if they can obtain elements from another source, or if they can provide the proposed service by purchasing the service at wholesale rates from a LEC. In general, and as discussed above, section 251(c)(3) imposes on incumbent LECs the obligation to offer on an unbundled basis all network elements for which it is technically feasible to provide access. We believe the plain language of section 251(d)(2), and the standards articulated there, give us the discretion to limit the general obligation imposed by subsection 251(c)(3), but they do not require us to do so. The standards set forth in section 251(d)(2) are minimum considerations that the Commission shall take into account in evaluating unbundling requirements. Accordingly, we conclude that the statute does not require us to interpret the "impairment"

[605] *See* Random House College Dictionary 665 (rev. ed. 1984).

standard in a way that would significantly diminish the obligation imposed by section 251(c)(3).

287. The interpretation advanced by most of the BOCs and GTE, described above, means that, if a requesting carrier could obtain an element from a source other than the incumbent, then the incumbent need not provide the element. We agree with the reasoning advanced by some of the commenters that this interpretation would nullify section 251(c)(3) because, in theory, any new entrant could provide all of the elements in the incumbents' networks. Congress made it possible for competitors to enter local markets through the purchase of unbundled elements because it recognized that duplication of an incumbent's network could delay entry, and could be inefficient and unnecessary.[606] The interpretation proffered by the BOCs and GTE would inhibit new entry and thus restrict the potential for meaningful competition, which would undermine the procompetitive goals of the 1996 Act. As a practical matter, if it is more efficient and less costly for new entrants to obtain network elements from a source other than an incumbent LEC, new entrants will likely pursue the more efficient and less costly approach. Additionally, as discussed above at section IV.C, we believe that allowing incumbent LECs to deny access to unbundled elements on the grounds that an element is equivalent to a service available at resale would lead to impractical results, because incumbents could completely avoid section 251(c)(3)'s unbundling obligations by offering unbundled elements to end users as retail services.[607]

288. Finally, we decline at this time to adopt any of the additional criteria proposed by commenters. We conclude that none of the additional factors suggested by commenters enhances our ability to identify unbundled network elements consistent with the procompetitive goals of the 1996 Act.[608] These additional considerations would limit unbundling requirements or make it administratively more difficult for new entrants to obtain additional unbundled elements beyond those identified in our minimum list of required elements. For example, we believe that the proposal that new entrants must provide detailed estimates regarding projected market demand is not necessary for incumbent LECs to efficiently plan for network growth.

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[606] *See* LDDS comments at 37, reply at 14-15.

[607] *See infra*, Section V.H, for a further discussion on the relationship between sections 251(c)(3) and 251(c)(4).

[608] *See, e.g.*, Texas Public Utility Counsel comments at 9-11; Cincinnati Bell comments at 15; Nortel comments at 6 (the diversion of research and development efforts to facilities that new entrants do not really want will stifle innovation); SBC comments at 25-37, 84-99.

F. Provision of a Telecommunications Service Using Unbundled Network Elements

1. Background

289. Section 251(c)(3) provides that an incumbent LEC must provide access to "unbundled network elements in a manner that allows requesting carriers to combine such elements in order to provide" a telecommunications service.[609] In the NPRM, we sought comment on the meaning of this requirement.

2. Comments

290. The Illinois Commission and Texas Public Utility Counsel, as well as a number of potential local competitors, argue that incumbent LECs cannot limit the nature of requests for required elements, restrict the sale of those elements or the manner in which carriers use them,[610] impose requirements on the use of unbundled elements, or require the purchase of elements that carriers do not need.[611] The Texas Public Utility Counsel contends that carriers may combine unbundled elements with any technically-compatible equipment.[612] AT&T argues that incumbent LECs should be prohibited from separating elements that are ordered in combination, or from varying the definition of an unbundled element based on the services a carrier seeks to offer (absent the consent of the requesting carrier). AT&T and Comptel also argue that, in order to enable new entrants to offer competing services, incumbent LECs must perform the functions necessary to combine elements, and they must do so in any technically feasible manner requested by a new entrant.[613] According to Comptel, incumbent LECs must provide the operational and back office systems necessary for requesting carriers to purchase and combine network elements, otherwise the new entrants' ability to compete will be

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[609] 47 U.S.C. § 251(c)(3).

[610] Illinois Commission comments at 36-38; CompTel reply at 21; Cable & Wireless reply at 20; LDDS comments at 40 (the statute grants carriers the right to use unbundled elements to offer any telecommunications service); *accord* GCI reply at 11.

[611] LDDS comments at 40; AT&T comments at 27; Cable & Wireless reply at 20; Texas Public Utility Counsel comments at 8-9; *see also* NCTA comments at 40-41 (new entrants must have access to elements that are necessary to provide a telecommunications service).

[612] Texas Public Utility Counsel comments at 8-9.

[613] AT&T comments at 27; CompTel reply at 23-24; *see also* MCI comments at 23.

impaired.[614] Sprint contends that this provision requires incumbents to offer different facilities and services in connection with a particular element, depending on the service a requesting carrier seeks to offer.[615] The Florida Commission argues, however, that, if a new entrant needs a particular variation of an element to offer a service, that element should be treated as distinct. This means, for example, that, if a requesting carrier seeks a local loop with a specific kind of conditioning, that loop should be treated as a distinct element from loops with other kinds of conditioning.[616]

291. NYNEX contends that incumbent LECs are not obligated to connect unbundled elements either to each other or to new entrants' facilities, and that the text of section 251(c)(3) requires requesting carriers to do the combining.[617] BellSouth argues that section 251(c)(3) requires requesting carriers to identify network elements with sufficient specificity so that their characteristics and appropriate uses can be defined. BellSouth contends that section 251(c)(3) prohibits carriers from requesting elements to provide cable or information services.[618]

3. Discussion

292. Under section 251(c)(3), incumbent LECs must provide access to "unbundled network elements in a manner that allows requesting carriers to combine such elements in order to provide" a telecommunications service.[619] We agree with the Illinois Commission, the Texas Public Utility Counsel, and others that this language bars incumbent LECs from imposing limitations, restrictions, or requirements on requests for, or the sale or use of, unbundled elements that would impair the ability of requesting carriers to offer telecommunications services in the manner they intend. For example, incumbent LECs may not restrict the types of telecommunications services requesting carriers may offer through unbundled elements, nor may they restrict requesting carriers from combining elements with

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[614] CompTel comments at 38. Back office systems include the administrative means by which incumbent LECs commercially provision telecommunications services to consumers. Thus, they include the means by which incumbent LECs accept orders for services, respond to requests for repairs, etc.

[615] Sprint comments at 30.

[616] Florida Commission comments at 22.

[617] NYNEX reply at 19.

[618] BellSouth comments at 36; *see also* PacTel reply at 16-17.

[619] 47 U.S.C. § 251(c)(3).

any technically compatible equipment the requesting carriers own. We also conclude that section 251(c)(3) requires incumbent LECs to provide requesting carriers with all of the functionalities of a particular element, so that requesting carriers can provide any telecommunications services that can be offered by means of the element. We believe this interpretation provides new entrants with the requisite ability to use unbundled elements flexibly to respond to market forces, and thus is consistent with the procompetitive goals of the 1996 Act.

293. We agree with AT&T and Comptel that the quoted text in section 251(c)(3) bars incumbent LECs from separating elements that are ordered in combination, unless a requesting carrier specifically asks that such elements be separated. We also conclude that the quoted text requires incumbent LECs, if necessary, to perform the functions necessary to combine requested elements in any technically feasible manner either with other elements from the incumbent's network, or with elements possessed by new entrants, subject to the technical feasibility restrictions discussed below. We adopt these conclusions for two reasons. First, in practice it would be impossible for new entrants that lack facilities and information about the incumbent's network to combine unbundled elements from the incumbents' network without the assistance of the incumbent. If we adopted NYNEX's proposal, we believe requesting carriers would be seriously and unfairly inhibited in their ability to use unbundled elements to enter local markets. We therefore reject NYNEX's contention that the statute requires requesting carriers, rather than incumbents, to combine elements. We do not believe it is possible that Congress, having created the opportunity to enter local telephone markets through the use of unbundled elements, intended to undermine that opportunity by imposing technical obligations on requesting carriers that they might not be able to readily meet.

294. Second, given the practical difficulties of requiring requesting carriers to combine elements that are part of the incumbent LEC's network, we conclude that section 251(c)(3) should be read to require incumbent LECs to combine elements requested by carriers. More specifically, section 251(c)(3) provides that incumbent LECs must provide unbundled elements "in a manner that allows requesting carriers to combine them" to provide a telecommunications service. We believe this phrase means that incumbents must provide unbundled elements in a way that *enables* requesting carriers to combine them to provide a service. The phrase "allows requesting carriers to combine them," does not impose the obligation of physically combining elements exclusively on requesting carriers. Rather, it permits a requesting carrier to combine the elements if the carrier is reasonably able to do so. If the carrier is unable to combine the elements, the incumbent must do so.[620]

[620] In this context, we conclude that the term "combine" means connecting two or more unbundled network elements in a manner that would allow a requesting carrier to offer the telecommunications service it seeks to offer.

295. Our conclusion that incumbent LECs must combine unbundled elements when so requested is consistent with the method we have adopted to identify unbundled network elements. Under our method, incumbents must provide, as a single, combined element, facilities that could comprise more than one element. This means, for example, that, if the states require incumbent LECs to provision subloop elements, incumbent LECs must still provision a local loop as a single, combined element when so requested, because we identify local loops as a single element in this proceeding.[621]

296. We decline to adopt the view proffered by some parties that incumbents must combine network elements in any technically feasible manner requested. This proposal necessarily means that carriers could request incumbent LECs to combine elements that are not ordinarily combined in the incumbent's network. We are concerned that, in some instances, this could potentially affect the reliability and security of the incumbent's network, and the ability of other carriers to obtain interconnection, or request and use unbundled elements. Accordingly, incumbent LECs are required to perform the functions necessary to combine those elements that are ordinarily combined within their network, in the manner in which they are typically combined. Incumbent LECs are also required to perform the functions necessary to combine elements, even if they are not ordinarily combined in that manner, or they are not ordinarily combined in the incumbent's network, provided that such combination is technically feasible,[622] and such combination would not undermine the ability of other carriers to access unbundled elements or interconnect with the incumbent LEC's network. Incumbent LECs must prove to state commissions that a request to combine particular elements in a particular manner is not technically feasible, or that the request would undermine the ability of other carriers to access unbundled elements and interconnect because they have the information to support such a claim.

297. We agree with Sprint and the Florida Commission, respectively, that in some cases incumbent LECs may be required to provision a particular element in different ways, depending on the service a requesting carrier seeks to offer; and, in other instances, where a new entrant needs a particular variant of an element to offer a service, that element should be treated as distinct from other variants of the element. This means, for example, that we will treat local loops with a particular type of conditioning[623] as distinct elements that are different

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[621] *See infra*, Section V.J.

[622] As discussed in Section IV, effects on network reliability and security are factors to be considered in determining technical feasibility.

[623] For an explanation of what conditioning of a local loop means *see infra*, Section V.J.1.

from loops with other types of conditioning.[624] As discussed below, we agree with CompTel that incumbent LECs must provide the operational and support systems necessary for requesting carriers to purchase and combine network elements. Incumbent LECs use these systems to provide services to their own end users, and new entrants similarly must have access to them to provide telecommunications services using unbundled elements.[625] Finally, we agree with BellSouth that requesting carriers must specify to incumbent LECs the network elements they seek before they can obtain such elements on an unbundled basis. We do not believe, however, that it will always be possible for new entrants to do this either before negotiations (or arbitrations) begin, or before they end, because new entrants will likely lack knowledge about the facilities and capabilities of a particular incumbent LEC's network. We further believe that incumbent LECs must work with new entrants to identify the elements the new entrants will need to offer a particular service in the manner the new entrants intend.

G. Nondiscriminatory Access to Unbundled Network Elements and Just, Reasonable and Nondiscriminatory Terms and Conditions for the Provision of Unbundled Network Elements

1. Background

298. Section 251(c)(3) requires incumbent LECs to provide requesting carriers "nondiscriminatory access to network elements on an unbundled basis . . . on rates, terms, and conditions that are just, reasonable, and nondiscriminatory."[626] In the NPRM, we sought comment on whether we should adopt minimum national requirements governing the terms and conditions for the provision of unbundled network elements. We further asked what rules could ensure that the terms and conditions for access to unbundled network elements are just, reasonable and nondiscriminatory, and how we should enforce such rules. In particular, we sought comment on whether we should adopt uniform national rules governing provisioning, service, maintenance, technical standards and nondiscrimination safeguards in connection with the provision of unbundled network elements. We also asked whether we should consider any of the terms and conditions applicable to the provision of access to unbundled elements in evaluating BOC applications to provide in-region interLATA services under section 271(b).[627]

2. Comments

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[624] Florida Commission comments at 22.

[625] Incumbent LEC back-office systems are discussed in Section V.J.

[626] 47 U.S.C. § 251(c)(3).

[627] NPRM at paras. 79, 89.

299. The Florida, Illinois and Washington Commissions, as well as a number of potential competitors, argue that we should adopt national standards governing the terms and conditions for the provision of unbundled elements to ensure that new entrants obtain nondiscriminatory access to elements. These parties contend that incumbent LECs have the incentive and ability to delay the provisioning of unbundled elements, to provide lower quality services to new entrants, and engage in other anticompetitive tactics. They further argue that it would be a tremendous barrier to entry if new entrants had to negotiate the terms and conditions for the provision of unbundled elements on a state by state basis, especially in light of the incumbent LECs' superior bargaining power. Accordingly, they argue that we should establish requirements mandating nondiscriminatory performance for ordering, installation, provisioning, maintenance, repair and billing.[628] Cable & Wireless argues that access to unbundled network elements on a nondiscriminatory basis will assist small carriers in entering local exchange markets because small carriers cannot afford the capital necessary to build competing infrastructure.[629]

300. The parties arguing for national standards governing the terms and conditions for the provision of unbundled elements disagree, however, on the types of requirements we should establish. Teleport and Intermedia Communications argue that incumbent LECs should be required to provide installation, service and maintenance for new entrants pursuant to the same standards they do for themselves.[630] NCTA, MCI, and Cable & Wireless argue that we should adopt specific standards, including time limits, for implementation of requests for unbundled elements.[631] MCI, AT&T, Frontier and the Washington and Texas Commissions further argue that incumbents should be required to provide access to unbundled elements that

[628] MFS comments at 16-17, 41; AT&T comments at 33-39; AT&T reply at 21-22; TCC comments at 54-60; Cable & Wireless comments at 36-37; MCI comments at 20-27; Ericsson comments at 3; Continental comments at 19; Comcast comments at 24-25; Intermedia comments at 3-13; Florida Commission comments at 21; Illinois Commission comments at 40; Washington Commission comments at 21-22; Sprint comments at 17-19; GST comments at 17; Teleport reply at 26-29; Nextel comments at 9-10; NCTA comments at 44-46; Colorado Commission comments at 27 (some general terms and conditions would be useful); Texas Commission comments at 15-16.

[629] Cable & Wireless comments at 23; *see also* SBA comments at 14-15 (the Commission should establish terms and conditions for the provision of unbundled elements, for otherwise, the provision of unbundled elements to smaller competitors would be rendered useless).

[630] Teleport comments at 25, 33-34, reply at 26-29; Intermedia comments at 3-13.

[631] NCTA comments at 44-46; MCI comments at 24-30; Cable & Wireless comments at 36-37; *see also* Intermedia comments at 3-6.

is equal in quality to what the incumbents provide themselves.[632] PageNet argues that the "equal-in-quality" standard does not mean that treatment should be identical where different technology is used, but that the quality should be the same.[633] Time Warner and Continental argue that we should subject incumbents to reasonable provisioning standards.[634] The District of Columbia Commission argues that we should adopt a general rule that the incumbent must offer the same services under the same terms and conditions to all similarly situated customers.[635] Finally, Lincoln Tel. argues that the Commission should adopt the terms and conditions established in our Expanded Interconnection and Open Network Architecture proceedings.[636]

301. A number of incumbents, including Bell Atlantic, SBC, GVNW and NYNEX, contend that we should not set specific rules, including time limits, for installation, service, maintenance and repair because incumbent LECs have different operational and administrative systems, and are subject to different state standards.[637] GVNW further notes that specific intervals would impose an uneconomic burden on rural LECs because it would force them to purchase excess capacity in advance.[638] The Washington and Florida Commissions, as well as SBC, GVNW, NYNEX, and AT&T, argue that we should adopt a general nondiscrimination standard and require incumbent LECs to provide network elements to new entrants according to the same installation, service, and maintenance intervals that apply to LEC customers and services. The Florida Commission observes that state requirements vary by state, and therefore states are in the best position to evaluate disputes relating to installation, service and

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[632] MCI comments at 23; AT&T comments at 33-39 (the Commission has imposed similar requirements in other instances where the BOCs provide competitive services that rely on monopoly inputs controlled by the BOCs); Texas Commission comments at 15-16; Washington Commission comments at 21; Frontier comments at 18; *accord* MFS comments at 17, 41; *see also* ACSI comments at 51; Ohio commission comments at 31.

[633] PageNet comments at 6-9.

[634] Time Warner comments at 44-45; Continental comments at 20.

[635] District of Columbia Commission comments at 19-22.

[636] Lincoln Tel. comments at 9.

[637] Bell Atlantic comments at 31; SBC comments at 37-38; GVNW comments at 17; NYNEX reply at 32-33; *see also* Colorado Commission comments at 24-27 (certain technical standards may not be economically reasonable in all areas because of differences in technology, demography and geography).

[638] GVNW comments at 17.

maintenance intervals.[639] NYNEX explains that implementation of such a general standard will vary based on technology, service offering, and geographic area, and therefore states and negotiating parties are in the best position to determine specific implementation responsibilities.[640] TCC argues that we should adopt a general standard prohibiting incumbents from favoring their own retail operations and that consumers should not be able to perceive a difference between services provided by incumbents and those provided by new entrants.[641] Bell Atlantic contends that, while we should adopt a general nondiscrimination standard, this standard should not incorporate the standards that apply to LEC customers and services because many unbundled elements are new services with which incumbent LECs have no experience.[642] The Pennsylvania Commission argues that the terms and conditions adopted herein should accommodate local variations.[643]

302. A number of potential competitors argue that, to achieve nondiscriminatory provision of unbundled elements, incumbent LECs must be required to provide pre-ordering, ordering, provisioning, billing, and maintenance and repair, and other services on a "real time" basis, which can only be done through the use of electronic ordering interfaces.[644] CompTel argues that incumbents provide these types of services to themselves by automated means and therefore they should be available to competing providers through automation.[645] AT&T contends that manual interfaces for the provision of unbundled elements would cause overwhelming delays that would inhibit the ability of new entrants to compete.[646] AT&T further argues that we should establish national standards for gateways that would interface with incumbent LEC electronic ordering systems. According to AT&T, the Commission

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[639] Washington Commission comments at 21-22; Florida Commission comments at 21; SBC comments at 37-38; AT&T comments at 33-39; AT&T reply at 21-22; NYNEX reply at 32-33; *accord* TCC comments at 54-60; Intermedia comments at 3-13.

[640] NYNEX reply at 32-33.

[641] TCC comments at 54-60.

[642] Bell Atlantic comments at 31.

[643] Pennsylvania Commission comments at 25.

[644] Sprint comments at 17-22; Teleport reply at 26-29; AT&T comments at 33-39; AT&T reply at 21-22; TCC comments at 54-60; MCI comments at 23. *See infra*, Section V.J.5, summarizing the Electronic Communications Implementation Committee's definition of an electronic interface.

[645] CompTel reply at 23-24.

[646] AT&T comments at 33-39, reply at 21-22.

should oversee the development of such gateways and incumbent LECs should be required to provide electronic ordering systems with the same level of quality that they provide in such systems for themselves.[647] AT&T, MCI, and Sprint argue that we should establish deadlines for the development of electronic interface systems, and a deadline for implementation of such systems.[648] TCC argues that incumbents should not delay provision of unbundled elements until automated interfaces are developed.[649] Lincoln Tel. contends, however, that we should not require small and medium size incumbent LECs to provide electronic ordering interfaces.[650]

303. Some potential competitors argue that we should impose additional terms and conditions for the provision of unbundled elements, including all test and turn-up procedures, nondiscriminatory access to incumbent LEC databases, around-the-clock provisioning support, and processes that would make it as easy and transparent for a customer to switch local carriers as it currently is to switch long distance carriers. These parties argue that we should require incumbents to continue to participate in cooperative industry practices, such as the Centralized Message Distribution System, and that new entrants should have access to such systems.[651] Sprint and NCTA contend that, because incumbent LECs can obtain access to a new entrant's CPNI, through access to signaling and databases, we should prohibit incumbent LECs from using a new entrant's proprietary information for marketing purposes.[652] MFS argues that we should set minimum technical standards in connection with the provision of unbundled elements, and thus we should require incumbent LECs to offer new entrants any type of loop facilities (*e.g.*, loop upgrades and conditioning) and transmission capabilities available within its network.[653] MCI contends we should adopt national technical standards in connection with the means to combine elements and access to information and that such technical standards should meet Bellcore and ANSI requirements. MCI further contends that,

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[647] AT&T comments at 33-39; *accord* TCC comments at 54-60.

[648] AT&T comments at 33-39; Sprint comments at 17-22 (the Commission should direct the industry to develop standards for electronic bonding within 12 months, and should require incumbents to implement these standards within 12 months); MCI comments at 20-27; MCI reply at 28-30.

[649] TCC comments at 54-60.

[650] Lincoln Tel. comments at 9.

[651] *See, e.g.*, MCI comments at 23; AT&T comments at 33-39; Continental comments at 23.

[652] Sprint comments at 17-22; NCTA comments at 43.

[653] MFS reply at 18-19.

to overcome incumbent LEC incentives to engage in dilatory tactics, the Commission should require incumbent LECs to implement the terms and conditions for the provision of unbundled elements within six months after the end of negotiations or arbitrations. MCI contends that this requirement will hasten the development of the technical standards and operational support systems that are necessary to provide unbundled elements in a nondiscriminatory manner.[654] AT&T argues that the terms and conditions for pre-ordering, ordering, provisioning, billing, and maintenance and repair should be the same under sections 251(c)(3) and 251(c)(4).[655]

304. PacTel and USTA argue that we should not establish national standards for installation, service, and maintenance and repair in connection with the provision of unbundled elements. PacTel contends that we should merely establish guidelines. USTA argues that the 1996 Act does not authorize the Commission to establish such standards, and the advantages of rules for the provision of unbundled elements are more than offset by the impingement on voluntary negotiations.[656] USTA and the California Commission further argue that we should not adopt technical standards to insure interoperability between networks because this function is performed by standards bodies, and the differences in operational and administrative systems between LEC networks result in different provisioning and service intervals. They further argue that any requirements on technical standards would hinder efficiency.[657] PacTel argues that there is very little opportunity for discrimination against competing providers because few elements are dedicated to specific new entrants. PacTel further contends that we should not establish rules to insure nondiscriminatory provision of network elements because such rules will encourage litigation and the 1996 Act is self-effectuating. PacTel argues that we should consider claims of discrimination on a case-by-case basis through adjudication of complaints.[658] Both PacTel and USTA argue that the terms and conditions for the provision of unbundled elements should be resolved by private parties,

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[654] MCI comments at 20-27; MCI reply at 28-30.

[655] AT&T comments at 33-39.

[656] PacTel comments at 40-44; USTA comments at 21-22; *see also* GTE comments at 24.

[657] USTA comments at 21-22; California Commission comments at 26-28; *see also* Colorado Commission comments at 27 (national technical standards are a laudable goal but should be carefully considered because of differences between incumbent LEC networks); Oregon commission comments at 24.

[658] PacTel comments at 30, 50-52; *accord* GVNW comments at 23-24 (requiring incumbent LECs to provide equivalent service is a negative incentives approach; the FCC will achieve nondiscriminatory provision of unbundled elements if it insures that incumbents are adequately compensated for such services).

the states, and industry fora.[659] The California Commission argues that the states are best situated to determine the terms and conditions for the provision of unbundled elements because they can best accommodate unique circumstances. The California Commission also argues that the Commission can determine whether the terms and conditions for the provision of unbundled elements are appropriate when the Commission evaluates BOC section 271 applications.[660]

305. Teleport argues that we must impose some method of enforcing terms and conditions applicable to unbundled elements, otherwise such regulations will not achieve their desired effect.[661] Thus, Teleport and a number of other potential competitors argue that we should impose penalties on incumbent LECs who fail to meet our standards.[662] MFS and NCTA argue that new entrants should be entitled to damages, and NCTA further contends that new entrants should be entitled to a reduction in rates for violations of our rules.[663] AT&T and Intermedia Communications argue that incumbents should be required to file reports demonstrating compliance with the terms and conditions established herein.[664] AT&T and others specifically request that the Commission require each incumbent LEC to file quarterly reports identifying the time intervals under which the incumbents have performed ordering, provisioning, and maintenance functions for competitors and for the incumbents' end-user customers.[665] MCI and Cable & Wireless argue that we should maintain oversight of the process by which incumbent LECs implement requests for unbundled elements.[666] PacTel opposes the imposition of penalties for failure to meet performance standards on the grounds that this will foster litigation and unwarranted claims of breach.[667]

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[659] PacTel comments at 30, 40-44; USTA comments at 21-22.

[660] California Commission comments at 26-28; *see also* Oregon commission comments at 27.

[661] Teleport reply at 26-29.

[662] Teleport comments at 25-34, reply at 26-29; MCI comments at 20, reply at 28-30; NCTA comments at 44-46; Comcast comments at 24-25; Continental comments at 20.

[663] MFS comments at 16-17, 41; NCTA comments at 45-46.

[664] AT&T comments at 33-39; Intermedia comments at 3-6.

[665] *See, e.g.*, AT&T comments at 38; GCI comments at 9; Intermedia comments at 4-5; ACTA comments at 15.

[666] MCI comments at 21-27; Cable & Wireless comments at 36-37.

[667] Pactel comments at 30.

306. A number of potential entrants argue that the Commission should condition BOC entry into the in-region long distance market on fulfillment of the terms and conditions for the provision of unbundled elements.[668] Teleport argues that once the BOCs get into the in-region long distance market they will have no incentive to provide competitors with nondiscriminatory access to unbundled network elements.[669] PacTel, however, argues that we should conclude that the checklist in section 271 is satisfied if an incumbent LEC is providing unbundled elements as required by the Commission and states, and we should not consider the terms and conditions for the provision of unbundled elements in evaluating section 271 applications.[670]

3. Discussion

307. We agree with those commenters, including the Florida, Illinois and Washington Commissions, that to achieve the procompetitive goals of the 1996 Act, it is necessary to establish rules that define the obligations of incumbent LECs to provide nondiscriminatory access to unbundled network elements, and to provide such elements on terms and conditions that are just, reasonable and nondiscriminatory.[671] As discussed above at sections II.A, II.B and V.B, we believe that incumbent LECs have little incentive to facilitate the ability of new entrants, including small entities, to compete against them and, thus, have little incentive to provision unbundled elements in a manner that would provide efficient competitors with a meaningful opportunity to compete. We are also cognizant of the fact that incumbent LECs have the incentive and the ability to engage in many kinds of discrimination. For example, incumbent LECs could potentially delay providing access to unbundled network elements, or they could provide them to new entrants at a degraded level of quality.

308. Consistent with arguments advanced by the Florida and Washington Commissions, incumbent LECs, and potential competitors, and as more fully discussed in the specific sections below, we adopt general, national rules defining "nondiscriminatory access" to unbundled network elements, and "just, reasonable, and nondiscriminatory" terms and conditions for the provision of such elements. We have chosen this approach, rather than

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[668] MCI comments at 21-27; Teleport comments at 25-34 (arguing that it is already experiencing service quality problems); Cable & Wireless comments at 36-37; TCC comments at 54-60; CompTel comments at 23-24; LDDS comments at 27.

[669] Teleport comments at 25-35.

[670] PacTel comments at 40-44.

[671] *See infra*, Section VII, for a discussion of just, reasonable and nondiscriminatory rates for unbundled network elements.

allowing states exclusively to consider these issues, because we believe that some national rules regarding nondiscriminatory access will reduce the costs of entry and speed the development of competition.[672]

309. We conclude, for example, that national rules defining the 1996 Act's requirements regarding nondiscriminatory access to, and provision of, unbundled elements will reduce costs associated with potential litigation over these issues, and will enable states to conduct arbitrations more quickly by reducing the number of issues they must consider. Such rules will also facilitate the ability of the Commission to conduct arbitrations, should we assume a state's responsibilities under section 252(e)(5). We conclude further that such rules will create some uniformity across states in connection with the terms under which new entrants may obtain access to network elements, thus facilitating the ability of potential competitors, including small entities, to enter local markets on a regional or national scale. Accordingly, for all of these reasons, we reject the arguments of PacTel and USTA that we should not adopt national rules relating to incumbent LEC obligations to provide access to, and provision, unbundled elements in a nondiscriminatory manner.

310. The record compiled in this proceeding supports the adoption of uniform general rules that rely on states to develop more specific requirements in arbitrations and other state proceedings. More significantly, however, we agree with the California and Florida Commissions that the states are best situated to issue specific rules because of their existing knowledge regarding incumbent LEC networks, capabilities, and performance standards in their separate jurisdictions and because of the role they will play in conducting mediations, arbitrations, and approving agreements. We expect that the states will implement the general nondiscrimination rules set forth herein by adopting, *inter alia*, specific rules determining the timing in which incumbent LECs must provision certain elements, and any other specific conditions they deem necessary to provide new entrants, including small competitors, with a meaningful opportunity to compete in local exchange markets. The states will continue to gain expertise in connection with issues relating to just, reasonable, and nondiscriminatory access and provision of unbundled network elements. We expect to turn to the states, and rely on the expertise they develop in this area, when we review and revise our rules as necessary.

311. We agree with those commenters that argue that incumbent LECs should be required to fulfill some type of reporting requirement to ensure that they provision unbundled elements in a nondiscriminatory manner. We believe the record is insufficient at this time to adopt such requirements, and we may reexamine this issue in the future. We encourage the

[672] *See supra*, Section V.B.

states, however, to adopt reporting requirements.[673] We decline to address whether the Commission should consider any of the terms and conditions adopted here in evaluating BOC applications to provide in-region long distance services. We will consider this issue, as it arises, when we evaluate individual BOC applications.

a. Nondiscriminatory Access to Unbundled Network Elements

312. We conclude that the obligation to provide "nondiscriminatory access to network elements on an unbundled basis"[674] refers to both the physical or logical connection to the element and the element itself. In considering how to implement this obligation in a manner that would achieve the 1996 Act's goal of promoting local exchange competition, we recognize that new entrants, including small entities, would be denied a meaningful opportunity to compete if the quality of the access to unbundled elements provided by incumbent LECs, as well as the quality of the elements themselves, were lower than what the incumbent LECs provide to themselves. Thus, we conclude it would be insufficient to define the obligation of incumbent LECs to provide "nondiscriminatory access" to mean that the quality of the access and unbundled elements incumbent LECs provide to all requesting carriers is the same. As discussed above with respect to interconnection,[675] an incumbent LEC could potentially act in a nondiscriminatory manner in providing access or elements to all requesting carriers, while providing preferential access or elements to itself. Accordingly, we conclude that the phrase "nondiscriminatory access" in section 251(c)(3) means at least two things: first, the quality of an unbundled network element that an incumbent LEC provides, as well as the access provided to that element, must be equal between all carriers requesting access to that element; second, where technically feasible, the access and unbundled network element provided by an incumbent LEC must be at least equal-in-quality to that which the incumbent LEC provides to itself.[676]

313. We believe that Congress set forth a "nondiscriminatory access" requirement in section 251(c)(3), rather then an absolute equal-in-quality requirement, such as that set forth in section 251(c)(2)(C), because, in rare circumstances, it may be technically infeasible for incumbent LECs to provide requesting carriers with unbundled elements, and access to such

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[673] We address issues regarding enforcement of the rules we adopt in this Section, regarding nondiscriminatory access to, and just, reasonable and nondiscriminatory terms and conditions for the provision of unbundled network elements, at *supra*, in Section II.E.

[674] 47 U.S.C. § 251(c)(3).

[675] *See supra*, Sections IV.G, IV.H.

[676] We note that providing access or elements of lesser quality than that enjoyed by the incumbent LEC would also constitute an "unjust" or "unreasonable" term or condition.

elements, that are equal-in-quality to what the incumbent LECs provide themselves. According to some commenters, this problem arises in connection with one variant of one of the unbundled network elements we identify in this order. These commenters argue that a carrier purchasing access to a 1AESS local switch may not be able to receive, for example, the full measure of customized routing features that such a switch may afford the incumbent.[677] In the rare circumstances where it is technically infeasible for an incumbent LEC to provision access or elements that are equal-in-quality, we believe disparate access would not be inconsistent with the nondiscrimination requirement. Accordingly, we require incumbent LECs to provide access and unbundled elements that are at least equal-in-quality to what the incumbent LECs provide themselves, and allow for an exception to this requirement only where it is technically infeasible to meet.[678] We expect incumbent LECs to fulfill this requirement in nearly all instances where they provision unbundled elements because we believe the technical infeasibility problem will arise rarely. We further conclude, however, that the incumbent LEC must prove to a state commission that it is technically infeasible to provide access to unbundled elements, or the unbundled elements themselves, at the same level of quality that the incumbent LEC provides to itself.

314. Our conclusion that an incumbent LEC must provide unbundled elements, as well as access to them, that is "at least" equal in quality to that which the incumbent provides itself, does not excuse incumbent LECs from providing, when requested and where technically feasible, access or unbundled elements of higher quality.[679] As we discuss below,[680] we do not believe that this obligation is unduly burdensome to incumbent LECs because the 1996 Act requires a requesting carrier to pay the costs of unbundling, and thus incumbent LECs will be fully compensated for any efforts they make to increase the quality of access or elements within their own network.[681] Moreover, to the extent this obligation allows new entrants, including small entities, to offer services that are different from those offered by the

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[677] *See infra*, Section V.J, discussing commenters' arguments regarding the possible technical limitations of such switches.

[678] The exception described here does not excuse incumbent LECs from the obligation to modify elements within their networks to allow requesting carriers to obtain access to such elements where this is technically feasible. *See supra*, Section IV.D.

[679] An incumbent LEC, in accommodating a carrier's request for a particular unbundled element, may ultimately provision an element that is higher in quality than what the incumbent provides to itself. *See infra*, Section V.J.1.

[680] *See infra*, Section V.J. We require, for example, that incumbent LECs provide local loops conditioned to enable the provision of digital services (where technically feasible) even if the incumbent does not itself provide such digital services.

[681] *See infra*, Section VII.

incumbent, we believe it is consistent with Congress's goal to promote local exchange competition. We note that, to the extent an incumbent LEC provides an element with a superior level of quality to a particular carrier, the incumbent LEC must provide all other requesting carriers with the same opportunity to obtain that element with the equivalent higher level of quality. We further note that where a requesting carrier specifically requests access or unbundled elements that are lower in quality to what the incumbent LECs provide themselves, incumbent LECs may offer such inferior quality if it is technically feasible. Finally, we conclude that the incumbent LEC must prove to a state commission that it is technically infeasible to provide access to unbundled elements, or the unbundled elements themselves, at a level of quality that is superior to or lower than what the incumbent LEC provides to itself.

b. Just, Reasonable and Nondiscriminatory Terms and Conditions for the Provision of Unbundled Network Elements

315. The duty to provide unbundled network elements on "terms, and conditions that are just, reasonable, and nondiscriminatory" means, at a minimum, that whatever those terms and conditions are, they must be offered equally to all requesting carriers, and where applicable, they must be equal to the terms and conditions under which the incumbent LEC provisions such elements to itself.[682] We also conclude that, because section 251(c)(3) includes the terms "just" and "reasonable," this duty encompasses more than the obligation to treat carriers equally. Interpreting these terms in light of the 1996 Act's goal of promoting local exchange competition, and the benefits inherent in such competition, we conclude that these terms require incumbent LECs to provide unbundled elements under terms and conditions that would provide an efficient competitor with a meaningful opportunity to compete. Such terms and conditions should serve to promote fair and efficient competition. This means, for example, that incumbent LECs may not provision unbundled elements that are inferior in quality to what the incumbent provides itself because this would likely deny an efficient competitor a meaningful opportunity to compete. We reach this conclusion because providing new entrants, including small entities, with a meaningful opportunity to compete is a necessary precondition to obtaining the benefits that the opening of local exchange markets to competition is designed to achieve.

316. As is more fully discussed below,[683] to enable new entrants, including small entities, to share the economies of scale, scope, and density within the incumbent LECs' networks, we conclude that incumbent LECs must provide carriers purchasing access to

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[682] *See supras*, Sections IV.G, IV.H.

[683] *See infra*, Section V.J.

unbundled network elements with the pre-ordering, ordering, provisioning,[684] maintenance and repair, and billing functions of the incumbent LECs operations support systems. Moreover, the incumbent must provide access to these functions under the same terms and conditions that they provide these services to themselves or their customers. We discuss specific terms and conditions applicable to the unbundled elements identified in this order below, in Section V.J.

H. The Relationship Between Sections 251(c)(3) and 251(c)(4)

1. Background

317. Section 251(c)(4) provides that incumbent LECs must offer "for resale at wholesale rates any telecommunications service that the carrier provides at retail to subscribers that are not telecommunications carriers."[685] In the NPRM, we asked for comment on the relationship between this provision and section 251(c)(3). Specifically, we asked whether carriers can order and combine network elements to offer the same services that incumbent LECs offer for resale under section 251(c)(4). We observed that different pricing standards under section 252(d) apply to unbundled elements under section 251(c)(3) and resold services under section 251(c)(4), and that section 251(c)(3) contemplates the purchase of unseparated facilities (*i.e.*, facilities that can be used for either inter- or intrastate services) while subsection (c)(4) does not necessarily contemplate this. We asked for comment on the implications or significance of these differences.[686]

2. Comments

318. A number of commenters, including incumbent LECs and CAPs, argue that, in order to distinguish section 251(c)(4) from section 251(c)(3), the Commission must conclude that new entrants can only obtain access to unbundled elements if they own or possess some local exchange facilities that they plan to use in combination with unbundled elements to provide a local service.[687] According to NYNEX, the 1996 Act contemplates that new

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[684] The term "provisioning" includes installation.

[685] 47 U.S.C. § 251(c)(4).

[686] NPRM at para. 85.

[687] MFS comments at 36-40, 65-66; BellSouth comments at 31-33; Teleport comments at 39-42; Bell Atlantic comments at 14, reply at 5-6; Ameritech comments at 25-31; USTA comments at 23-26, reply at 10; TDS comments at 15-16; PacTel comments at 40-45; GTE reply at 17-18; SBC reply at 11; *accord* Pennsylvania Commission comments at 24; NYNEX comments at 29-39 (the FCC should state that new entrants can obtain unbundled elements to provide a service that is sold at resale only if they can self-provide, at a minimum, one of the elements used to provide the service).

entrants will enter local telephone markets either through section 251(c)(3) or section 251(c)(4). The former is designed for entrants with some of their own facilities, and would allow them to supplement their networks; the latter is designed for new entrants that do not possess any facilities.[688] MFS and Bell Atlantic concur and cite the legislative history to the 1996 Act.[689]

319. In support of this interpretation, some commenters cite the language of section 251(c)(3). Bell Atlantic contends that the phrase referring to unbundling at "any technically feasible point" means new entrants must have some of their own facilities to connect to that "point."[690] NYNEX argues that the phrase "such telecommunications service" excludes services provided by incumbents, and thus new entrants can only use unbundled elements to provide services that incumbents do not offer.[691]

320. Other commenters supporting this interpretation, including incumbent LECs and CAPs, contend that we must interpret the 1996 Act in a way that gives meaning to each provision. Accordingly, they argue that we cannot allow carriers to use unbundled elements exclusively to provide services that are available at resale, because to do so would make section 251(c)(4), and its associated pricing provision, section 252(d)(3), meaningless.[692] They assert that Congress established a more favorable pricing standard for unbundled elements than resold services to encourage facilities-based entry. They argue that Congress, recognizing that facilities-based carriers incur greater risks than resellers and are a more potent competitive force, created a statutory incentive to build competing facilities by

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[688] NYNEX reply at 16-19 (the language of the 1996 Act and the legislative history show that resale takes precedence over the unbundling provision); *accord* MFS reply at 20-22 (unbundled elements are not meant as an alternative to wholesale services for pure resellers).

[689] MFS comments at 37-40; Bell Atlantic comments at 12-14 (*citing* Joint Explanatory Statement at 148, which provides that, because of the significant investment required to duplicate an incumbent's network, new entrants will require access to elements in the incumbents' networks to supplement the facilities owned by the new entrants); *see also* Ameritech comments at 25-31 (Congress intended unbundled elements to be used by carriers that have some of their own facilities because the provision allows carriers to purchase only the elements they need); NYNEX reply at 16-19 (there is no evidence in the 1996 Act or the legislative history indicating that Congress intended to allow carriers to use unbundled elements an alternative way to resell services); USTA comments at 59-66.

[690] Bell Atlantic comments at 12-14. *See also* USTA comments at 59-66.

[691] NYNEX reply at 16-19.

[692] MFS comments at 36-40, 65-66; BellSouth comments at 31-33; NYNEX reply at 16-19; Bell Atlantic comments at 12-14; Bell Atlantic reply at 5-6; *accord* Teleport comments at 39-43 (specific provisions prevail over general ones, and thus, if carriers use unbundled elements to replicate a wholesale service offering, the specific provision dictating the price for wholesale services should be applied rather than the general one for unbundled elements); GTE reply at 17 (the Commission should not deprive incumbent LECs of their compensatory return on resold services).

providing carriers who use unbundled elements with the opportunity to achieve higher profits. According to these commenters, if we allow carriers that merely resell services to obtain the financial benefits of unbundled elements, we would reward them though they have incurred little risk, and we would discourage them from building competing facilities.[693] BellSouth and Ameritech argue that the language of section 251(d)(2)(B) further supports this view because, if carriers can offer a service for resale, then such carriers are not "impaired in their ability to offer a service."[694]

321. Ameritech, NYNEX, and MFS argue that allowing carriers to provide the equivalent of a resold service exclusively through the use of unbundled elements would eviscerate the joint marketing restriction in section 271(e)(1) because there is no comparable restriction in this provision against the joint marketing of services provided through unbundled elements.[695] BellSouth and Ameritech further contend that this view is consistent with the terms of section 251(c)(4)(B), which allows states to prohibit resellers from offering a service to a category of consumers different than the category of consumers the incumbent LEC offers that service to. They contend that, if we allowed requesting carriers to offer resold services exclusively through unbundled elements, then such carriers could evade any possible prohibition on the sale of such services and the authority to impose such limitations on resale is reserved to the states.[696]

322. Finally, a number of incumbent LECs and MFS argue that new entrants should not be allowed to provide services available for resale exclusively through the use of unbundled elements because such entrants could underprice: facilities-based competitors, that must recover joint and common costs, and incumbent LECs, that charge above-cost prices for some services to support universal service obligations. If new entrants could underprice incumbent LECs, they assert, then the ability of the LECs to recover their costs and meet their universal service obligations would be diminished. They also contend that allowing the exclusive use of unbundled elements would lead to arbitrage based on the pricing standards for sections 251(c)(3) and 251(c)(4). They further contend that, if resold services are priced

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[693] MFS comments at 37-40, reply at 20-23; Teleport comments at 39-43; NYNEX comments at 29-39; USTA comments at 23-26, reply at 8-10; Bell Atlantic comments at 12-14.

[694] BellSouth comments at 31-33; Ameritech comments at 25-31. For a further discussion of this argument *see supra*, Section V.E.

[695] Ameritech comments at 25-31, reply at 24; NYNEX reply at 16-19; MFS comments at 37-40 (further arguing that the prohibition against joint marketing through the use of resold services evidences Congress's preference for facilities-based competition).

[696] BellSouth comments at 31-33; Ameritech comments at 25-31.

below cost, this will discourage facilities-based entry through the purchase of unbundled elements.[697]

323. The Department of Justice and a number of potential competitors, including AT&T, Cable & Wireless, ALTS and LDDS, reject the view that, to give effect to section 251(c)(4), we must limit access to unbundled elements to those carriers who own some local exchange facilities. They argue that the 1996 Act allows carriers to use recombined network elements exclusively to provide services that are similar or identical to those offered by incumbent LECs for resale. To support this view they contend that the plain language of section 251(c)(3) does not contain any requirement that carriers must own some of their own local exchange facilities before they can purchase and use unbundled elements to provide a telecommunications service. According to these commenters, if we were to impose such a requirement, we would be reading into the 1996 Act a limitation on access to unbundled elements that is not stated anywhere within the statute.[698]

324. The parties which oppose conditioning access to unbundled elements on ownership of local exchange facilities also contend that sections 251(c)(3) and 251(c)(4) offer carriers different opportunities, and thus the rules of statutory construction do not require us to read use restrictions into section 251(c)(3) to distinguish and give meaning to section 251(c)(4).[699] AT&T, the Department of Justice, and others argue, for example, that carriers offering services through resale are limited to the precise service that the incumbent is providing. In contrast, these parties assert that carriers exclusively using unbundled elements can offer different and new services, or the same services with higher quality. In addition, these parties note that, under section 251(c)(3), carriers purchasing an unbundled element can provide all services which that element is typically used to provide, but under section

[697] Ameritech comments at 25-31, reply at 22; Bell Atlantic comments at 12-14, reply at 6; USTA comments at 23-26, reply at 8-10; MFS comments at 37-40, reply at 20-23; *accord* ALLTEL reply at 7; NYNEX comments at 29-39, reply at 16-19; Teleport comments at 39-43; PacTel reply at 25.

[698] AT&T comments at 28-31, reply at 12-20; TCC comments at 27-35; Cable & Wireless comments at 26-27, reply at 20-22; DoJ comments at 48-51, reply at 23-31; Sprint reply at 24-26; LDDS reply at 25-27; ALTS reply at 24-26; *but see* GTE reply at 17-18 (new entrants have just as much opportunity to offer new services through resale as they do through unbundled elements, with resold services new entrants can add value and develop new price plans).

[699] AT&T comments at 28-31, reply at 13-20; LDDS reply at 25-28; TCC comments at 27-35; CompTel reply at 13-22; DoJ comments at 48-51, reply at 23-31 (carriers will likely use resale to purchase services that incumbents price below cost, otherwise these services would never experience competition); Sprint comments at 24-26; Cable & Wireless comments at 20-22; MCI comments at 27-28 (carriers purchasing unbundled elements are not purchasing services, hence they are not the same thing as services available for resale).

251(c)(4), carriers purchasing services available for resale can only provide the service they purchase.[700]

325. Some of the commenters opposing restrictions on access to unbundled elements further argue that allowing carriers to use unbundled elements exclusively to provide the same or similar services that are sold at resale would reduce barriers to entry, and thus promote facilities-based competition. They explain that entrants using unbundled elements will incur lower costs, and will be able to offer more services than carriers who purchase services for resale. They further contend that this means that new entrants using unbundled elements will earn higher revenues, and will have more funds to build competing facilities, than carriers purchasing services available for resale. They also contend that a requirement that carriers own some facilities to purchase unbundled elements would impede entry into the access market and restrict competition for all local services to areas where construction of duplicate facilities is economically justified and has already occurred. Congress, they argue, did not intend to encourage the build out of competing facilities where it is not efficient and the reason Congress included the unbundling provision in the 1996 Act is because most areas only have one network.[701]

326. Some of the commenters who oppose restricting access to unbundled elements to those carriers who own some local exchange facilities also argue that any such restriction would be administratively burdensome and difficult to enforce. They contend, for example, that we would need to specify certain minimum facilities that carriers would need to own to obtain access to unbundled elements. They contend that, if we did not specify such minimum facilities, but merely required ownership or possession of a single facility (or any facility), then the requirement in general would have no practical significance.[702] The Department of Justice contends that we would need to determine whether carriers must own or possess a local exchange facility that is used for each consumer to whom they provide service.[703] In determining the relationship between sections 251(c)(3) and 251(c)(4), the Illinois Commission asks us to consider whether our interpretation would advance competition, reduce

[700] AT&T comments at 28-31, reply at 13-20; LDDS reply at 25-28; TCC comments at 27-35; CompTel reply at 13-22; DoJ comments at 48-51, reply at 23-31; Sprint comments at 24-26; Cable & Wireless comments at 20-22; MCI comments at 27-28.

[701] AT&T comments at 28-31, reply at 13-20; CompTel reply at 13-22; TCC comments at 27-35; DOJ comments at 48-51, reply at 23-31.

[702] DoJ comments at 48-51, reply at 23-31; AT&T reply at 13-20; Cable & Wireless reply at 20-22; LDDS reply at 25-30.

[703] DoJ comments at 48-51, reply at 23-31.

regulation, preserve and advance universal service, remove statutory, regulatory and economic impediments to new entry, and provide states with flexibility.[704]

327. Finally, NYNEX argues that carriers should not be permitted to offer services to consumers by combining unbundled elements and resold services because the different rates for unbundled elements and resale of services would allow for arbitrage.[705] Comptel and Sprint counter, however, that the 1996 Act does not prohibit the combined use of unbundled elements and resold services. Comptel further contends that Congress intended to provide new entrants with maximum flexibility in connection with opportunities to enter local telephone markets and thus it would be contrary to Congressional intent, as well as anticompetitive, if we prohibited carriers from using a combination of unbundled elements and services available for resale.[706]

3. Discussion

328. The language of section 251(c)(3) is cast exclusively in terms of obligations imposed on incumbent LECs, and it does not discuss, reference, or suggest a limitation or requirement in connection with the right of new entrants to obtain access to unbundled elements. We conclude, therefore, that Congress did not intend section 251(c)(3) to be read to contain any requirement that carriers must own or control some of their own local exchange facilities before they can purchase and use unbundled elements to provide a telecommunications service. We note that the Illinois Commission has reached the same conclusion.[707]

329. We reject the arguments advanced by Bell Atlantic and NYNEX that the language of section 251(c)(3) requires carriers seeking access to unbundled elements to own some local exchange facilities, and that this serves to distinguish section 251(c)(3) from section 251(c)(4). The "at any technically feasible point" language in section 251(c)(3) refers to points in an incumbent LEC's network where new entrants may obtain access to elements. It does not, however, require that new entrants interconnect local exchange facilities which they own or control at that technically feasible access point. If we were to conclude otherwise, then new entrants would be prohibited from requesting two network elements that

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[704] Illinois Commission comments at 38.

[705] NYNEX comments at 38-39.

[706] CompTel reply at 20-22; Sprint comments at 23-28.

[707] AT&T Communications of Illinois, Inc. *et. al.*, Petition for a Total Local Exchange Wholesale Service Tariff from Illinois Bell Telephone Company, Nos. 95-0458 and 95-0531 (consol.) at 63-65 (Illinois Commission June 26, 1996).

are connected to each other because the new entrant would be required to connect a single network element to a facility of its own. The 1996 Act, however, does not impose any limitations on carriers' ability to obtain access to unbundled network elements. Moreover, we conclude that Congress did not intend to limit access to unbundled elements in this manner because such a limit would seriously inhibit the ability of potential competitors to enter local markets through the use of unbundled elements, and thus would retard the development of local exchange competition. We also reject NYNEX's argument that the phrase "such telecommunications service" excludes services provided by the incumbent. This interpretation is inconsistent with the 1996 Act's definition of a telecommunications service, which includes all telecommunications services provided by an incumbent.

330. We also reject the argument that language in the Joint Explanatory Statement requires us to conclude that carriers must own facilities to obtain access to unbundled elements. Congress may have recognized that carriers that own some of their own facilities will more likely benefit by entering local markets through unbundled elements rather than resale, but this consideration does not imply that carriers must own their own facilities to obtain access to unbundled elements.[708]

331. We are not persuaded that, in order to give meaning and effect to section 251(c)(4), we must require new entrants to own some local exchange facilities in order to obtain access to unbundled elements. We disagree with the premise that no carrier would consider entering local markets under the terms of section 251(c)(4) if it could use recombined network elements solely to offer the same or similar services that incumbents offer for resale. We believe that sections 251(c)(3) and 251(c)(4) present different opportunities, risks, and costs in connection with entry into local telephone markets, and that these differences will influence the entry strategies of potential competitors. We therefore find that it is unnecessary to impose a limitation on the ability of carriers to enter local markets under the terms of section 251(c)(3) in order to ensure that section 251(c)(4) retains functional validity as a means to enter local phone markets.

332. The principal distinction between sections 251(c)(3) and 251(c)(4), in terms of the opportunities each section presents to new entrants, is that carriers using solely unbundled elements, compared with carriers purchasing services for resale, will have greater opportunities to offer services that are different from those offered by incumbents. More specifically, carriers reselling incumbent LEC services are limited to offering the same service an incumbent offers at retail. This means that resellers cannot offer services or products that incumbents do not offer. The only means by which a reseller can distinguish the services it offers from those of an incumbent is through price, billing services, marketing efforts, and to some extent, customer service. The ability of a reseller to differentiate its products based on

[708] *See* Joint Explanatory Statement at 148.

price is limited, however, by the margin between the retail and wholesale price of the product.

333. In contrast, a carrier offering services solely by recombining unbundled elements can offer services that differ from those offered by an incumbent. For example, some incumbent LECs have capabilities within their networks, such as the ability to offer Centrex, which they do not use to offer services to consumers. Carriers purchasing access to unbundled elements can offer such services. Additionally, carriers using unbundled elements can bundle services that incumbent LECs sell as distinct tariff offerings, as well as services that incumbent LECs have the capability to offer, but do not, and can market them as a bundle with a single price. The ability to package and market services in ways that differ from the incumbent's existing service offerings increases the requesting carrier's ability to compete against the incumbent and is likely to benefit consumers.[709] Additionally, carriers solely using unbundled network elements can offer exchange access services. These services, however, are not available for resale under section 251(c)(4) of the 1996 Act.[710]

334. If a carrier taking unbundled elements may have greater competitive opportunities than carriers offering services available for resale, they also face greater risks. A carrier purchasing unbundled elements must pay for the cost of that facility, pursuant to the terms and conditions agreed to in negotiations or ordered by states in arbitrations.[711] It thus faces the risk that end-user customers will not demand a sufficient number of services using that facility for the carrier to recoup its cost. (Many network elements can be used to provide a number of different services.) A carrier that resells an incumbent LEC's services does not face the same risk. This distinction in the risk borne by carriers entering local markets through resale as opposed to unbundled elements is likely to influence the entry strategies of various potential competitors. Some new entrants will be unable or unwilling to bear the financial risks of entry by means of unbundled elements and will choose to enter local markets under the terms of section 251(c)(4) irrespective of the fact that they can obtain access to unbundled elements without owning any of their own facilities.[712] Moreover, some markets may never support new entry through the use of unbundled elements because new entrants seeking to offer services in such markets will be unable to stimulate sufficient demand to recoup their investment in unbundled elements. Accordingly, in these markets

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[709] *See* AT&T comments at 25-31.

[710] *See infra*, Section VII; *see also* Letter from Bernard J. Ebbers, President LDDS WorldCom, to Rachelle B. Chong, Commissioner, Federal Communications Commission, July 11, 1996.

[711] *See infra*, Section VII, describing the terms under which new entrants will pay for the cost of unbundled elements.

[712] *See, e.g.*, AT&T reply at 13-20.

carriers will enter through the resale of incumbent LEC services, irrespective of the fact that they could enter exclusively through the use of unbundled elements.[713]

335. We are not persuaded by the argument set forth by Ameritech, NYNEX, and MFS that allowing carriers to use solely recombined network elements would eviscerate the joint marketing restriction in section 271(e)(1).[714] It is true that the terms of section 271(e) do not restrict joint marketing through the use of unbundled elements pursuant to section 251(c)(3). As discussed above, differences in opportunities and risk will cause some new entrants to consider entering local telephone markets through resale of incumbent LEC services, even if they could enter solely through the use of unbundled elements. Thus, we conclude that section 271(e)(1) will impose a meaningful limitation on joint marketing.

336. We note, moreover, that the 1996 Act does not prohibit all forms of joint marketing. For example, it does not prohibit carriers who own local exchange facilities from jointly marketing local and interexchange service. Nor does it prohibit joint marketing by carriers who provide local exchange service through a combination of local facilities which they own or possess, and unbundled elements. Because the 1996 Act does not prohibit all forms of joint marketing, we see no principled basis for reading into section 271(e)(1) a further limitation on the ability of carriers to jointly market local and long distance services without concluding that this section prohibits all forms of joint marketing. In other words, we see no basis upon which we could conclude that section 271(e)(1) restricts joint marketing of long distance services, and local services provided solely through the use of unbundled network elements, without also concluding that the section restricts the ability of carriers to jointly market long distance services and local services that are provided through a combination of a carriers' own facilities and unbundled network elements.[715] Moreover, we do not believe that we have the discretion to read into the 1996 Act a restriction on competition which is not required by the plain language of any of its sections.

337. We also reject the argument advanced by BellSouth and Ameritech that allowing carriers to use solely unbundled elements to provide services available through resale would allow carriers to evade a possible prohibition, which is reserved to the discretion of the states,

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[713] *See, e.g.*, Comptel reply at 13-16.

[714] Section 271(e)(1) provides that "[u]ntil a Bell operating company is authorized pursuant to subsection (d) to provide interLATA services in an in-region State, or until 36 months have passed since the date of enactment . . . a telecommunications carrier that serves greater than 5 percent of the Nation's presubscribed access lines may not jointly market in such State telephone exchange service obtained from such company pursuant to section 251(c)(4) with interLATA services." 47 U.S.C. § 271(e)(1).

[715] *See also* AT&T reply at 14-15 (the added risk of unbundled elements also means that new entrants are not circumventing section 271's joint marketing restriction because the additional risk justifies allowing carriers more flexibility to jointly market services); LDDS reply at 28-30.

on the sale of certain services to certain categories of consumers. Under section 251(c)(4)(B) states are permitted to restrict resellers from offering certain services to certain consumers, in the same manner that states restrict incumbent LECs.[716] For example, states that prohibit incumbent LECs from selling to business consumers residential services priced below cost have the ability to restrict resellers from selling such services to business consumers.

338. We do not believe, however, that carriers using solely unbundled elements to provide local exchange services will be able to evade any potential restrictions states may impose under section 251(c)(4)(B). In this section Congress granted the states the discretion to impose certain limited restrictions on the sale of services available for resale. It did not, however, grant states, in section 251(c)(3), the same discretion to impose similar restrictions on the use of unbundled elements. Accordingly, we are not persuaded that allowing carriers to use solely unbundled elements to provide services that incumbent LECs offer for resale would allow competing carriers to evade a possible marketing restriction that Congress intended to reserve to the discretion of the states.

339. We agree with those commenters who argue that it would be administratively impossible to impose a requirement that carriers must own some of their own local exchange facilities in order to obtain access to unbundled elements, and they must use these facilities, in combination with unbundled elements, for the purpose of providing local services. We conclude that it would not be possible to identify the elements carriers must own without creating incentives to build inefficient network architectures that respond not to marketplace factors, but to regulation. We further conclude that such a requirement could delay possible innovation. These effects would diminish competition for local telephone services, and thus any local exchange facilities requirement would be inconsistent with the 1996 Act's goals of promoting competition. Moreover, if we imposed a facilities ownership requirement that attempted to avoid these competitive pitfalls, it would likely be so easy to meet it would ultimately be meaningless.

340. We reject the argument that requiring carriers to own some local exchange facilities would promote competition for local exchange services, or that we should impose such a requirement for other policy reasons. To the contrary, we conclude that allowing carriers to use unbundled elements as they wish, subject only to the maintenance of the key elements of the access charge regime, described below at section VII, will lead to more efficient competition in local phone markets. If we were to limit access to unbundled network elements to those markets where carriers already own, or could efficiently build, some local exchange facilities, we would limit the ability of carriers to enter local markets under the pricing standard for unbundled elements to those markets that could efficiently support duplication of some or all of the incumbent LECs' networks. We believe that such a result could diminish competition, and that allowing new entrants to take full advantage of

[716] 47 U.S.C. § 251(c)(4)(B).

incumbent LECs' scale and scope economies will promote more rapid and efficient entry and will result in more robust competition.

341. Finally, we conclude that a new entrant may offer services to one group of consumers using unbundled network elements, and it may offer services to a separate group of consumers by reselling an incumbent LEC's services. With the exception noted in Section VII, *infra*, we do not address the issue of whether the 1996 Act permits a new entrant to offer services to the same set of consumers through a combination of unbundled elements and services available for resale.

I. Provision of Interexchange Services Through The Use of Unbundled Network Elements

1. Background

342. In the NPRM, we tentatively concluded that interexchange carriers are telecommunications carriers, and thus such carriers are entitled to access to unbundled elements under the terms of section 251(c)(3). We also tentatively concluded that carriers may request unbundled elements for purposes of originating and terminating toll services, in addition to any other services they seek to provide, because section 251(c)(3) provides that carriers may request unbundled elements to provide a "telecommunications service," and interexchange services are a telecommunications service.[717]

343. In the NPRM, we sought comment on whether the 1996 Act permits carriers to use unbundled elements to provide exchange access services only, or whether carriers seeking to provide exchange access services using unbundled elements must provide local exchange service as well. We premised the latter view on the definition of the term "network element," as a facility and not a service, and on the pricing standard under section 252(d)(1) that requires network elements to be priced based on economic costs (rather than jurisdictionally separated costs.)[718] We also sought comment on whether allowing carriers to purchase unbundled elements to provide exchange access services exclusively would be inconsistent with the terms of sections 251(i) and 251(g) and, further, whether this would result in a fundamental jurisdictional shift of the administration of interstate access charges to state jurisdictions.[719]

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[717] NPRM at paras. 159, 163.

[718] *See supra*, Section V.C. and *infra*, Section VII.

[719] NPRM at para. 164.

344. Finally, in the NPRM, we tentatively concluded that, if carriers purchase unbundled elements to provide exchange access services to themselves, irrespective of whether they provide such services alone or in connection with local exchange services, incumbent LECs cannot assess Part 69 access charges in addition to charges for the cost of the unbundled elements. We based this tentative conclusion on the view that the imposition of access charges in addition to cost-based charges for unbundled elements would depart from the statutory mandate of cost-based pricing of elements.[720]

2. Comments

345. A number of potential competitors, as well as the Department of Justice, the Illinois and Ohio Commissions, NYNEX, and USTA, agree with our tentative conclusions that interexchange carriers may obtain access to unbundled elements, and that carriers may purchase unbundled elements for the purpose of originating and terminating interexchange services because such services are a type of telecommunications service.[721] Some of these commenters support our tentative interpretation of the 1996 Act by arguing that section 251(c)(3) requires incumbent LECs to provide access to network elements without regard to the types of services carriers seek to offer, or the jurisdictional nature of such services. They contend that new entrants are paying the full cost for an element and thus are entitled to recover their costs by offering any services that use the element.[722] Others argue that, by its plain terms, the 1996 Act does not allow incumbent LECs to limit the types of services any carrier can offer in connection with the sale of unbundled elements.[723]

346. The Department of Justice and AT&T also contend that there are substantial economies of scope in the provision of local exchange and exchange access services, and that new entrants will need the revenue streams from both services to support the high cost of

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[720] NPRM at para. 165.

[721] NYNEX comments at 20-22; TCC comments at 27-35; Sprint comments at 67-70, reply at 32-34; Cable & Wireless comments at 27-32, reply at 20; MCI comments at 77-83; COMAV comments at 31; DoJ comments at 35-47; CompTel comments at 27,65; Frontier comments at 11, reply at 8-11; Illinois Commission at 51-52; Ohio Commission comments at 57-58; AT&T reply at 23-24; LDDS reply at 36-38; Excel comments at 4; TCC comments at 28; USTA comments at 59-66; *see also* Texas Public Utility Counsel comments at 39-40 (competition will push access rates to cost so the Commission should not put effort into protecting access charges); Citizens Utilities comments at 22.

[722] *See, e.g.*, DoJ comments at 35-47; AT&T reply at 23-24; TCC comments at 27-35; LDDS reply at 36-38 (because carriers pay the full unseparated cost of a network element, they are entitled to provide the full range of services over those elements); Excel comments at 4; TCC comments at 28; Frontier reply at 24-26.

[723] *See, e.g.*, DoJ comments at 35-47; Illinois Commission comments at 51-52; MCI comments at 77-84.

constructing competing local exchange facilities.[724] The Department of Justice and Comptel further assert that, if incumbent LECs are allowed to maintain market power over exchange access services then, when the BOCs are allowed into in-region long distance markets, the BOCs will be able to underprice other competitors in the sale of long distance services, and in the sale of bundled local and long distance services, and thus could undermine current competitive conditions in the long distance market.[725]

347. The commenters which support our tentative conclusion that carriers may use unbundled elements to provide interexchange services disagree, however, on whether requesting carriers can use unbundled elements solely to provide interexchange services or whether they must provide other services, including local services, as well. AT&T, MCI, Cable & Wireless, and GCI argue that the ability to provide exchange access services is a function of the loop, and the plain language of the 1996 Act does not permit incumbent LECs to deny requesting carriers the ability to obtain that functionality alone.[726] Sprint and the Department of Justice, however, contend that, while the 1996 Act does not prohibit carriers purchasing unbundled elements from offering only exchange access services, as a practical matter, any carrier purchasing access to a local loop will have to offer both local exchange and exchange access services.[727] The Department of Justice bases its contention on the assumption that the Commission will require carriers purchasing access to a local loop to take exclusive control of that loop. The Department of Justice explains that such a requirement is consistent with section 252's method for pricing network elements and with industry practice at the time the 1996 Act was adopted.[728] Sprint bases its contention on the view that allowing carriers to obtain access to local loops in order to provide only a single service is inconsistent with the idea that a network element is a facility and not a service.[729] The Department of

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[724] DoJ comments at 35-47; AT&T reply at 23-24.

[725] CompTel comments at 19-27; DoJ comments at 35-47.

[726] AT&T reply at 23-24; Cable & Wireless comments at 27-32; MCI comments at 77-84 (defining a local loop as a single network element is inconsistent with the 1996 Act's definition of a network element which states that a functionality can be a network element); GCI comments at 11; *see also* ACTA comments at 17; Excel comments at 4.

[727] Sprint comments at 67-70, reply at 34-36; DoJ comments at 35-47; *see also* LDDS reply at 37; *cf.* Citizens Utilities at 22 (it is unlikely that IXCs will purchase unbundled elements to provide solely exchange access services, because in the future they will market services through "one stop shopping," where they will offer local and long distance services as a bundled product); MFS comments at 65-66 (to meet market demand carriers will have to offer the services customers demand, and it is unlikely they will want only interexchange services).

[728] DoJ comments at 35-47.

[729] Sprint comments at 67-70.

Justice and Sprint thus argue that any carrier purchasing exclusive access to a local loop would have to provide all services demanded by the customer to whom that loop is dedicated. If a customer desires to receive both local exchange and exchange access services, then the carrier purchasing access to that customer's loop would have to provide both of these services.[730] Sprint observes, in contrast, that if a customer has two local loops dedicated to its premises a carrier could purchase access to one of the loops merely to provide exchange access services, because the customer could receive local exchange service from another carrier over the other local loop.[731]

348. In contrast, NYNEX, USTA, the Ohio Commission, and Puerto Rico Telephone argue that the 1996 Act does not impose any obligation on incumbent LECs to provide access to unbundled elements solely to allow carriers to provide originating and terminating exchange access services. They argue that carriers purchasing access to local loops in order to provide exchange access services must also provide local exchange services as well.[732] USTA supports its contention by arguing that, in order to obtain "access to" unbundled network elements, a carrier must "interconnect" to them under the terms of section 251(c)(2), but that carriers are eligible for interconnection under section 251(c)(2) only if they offer both local exchange and exchange access services. Accordingly, USTA asserts that carriers that interconnect to unbundled elements must offer both of these services.[733] NYNEX argues that sections 251(g) and (i), and the legislative history to the 1996 Act, make clear that Congress did not intend for section 251 to supplant the existing access charge regime, and that carriers thus can not obtain unbundled local loops merely to offer exchange access services. Carriers seeking access to unbundled loops must take the entire functionality of this element, and thus will have to offer both local exchange and exchange access services.[734] Puerto Rico Telephone further argues that the subsidies built into access charge prices enable incumbent LECs to meet their universal service obligations, and that a premature elimination of this contribution would cause massive increases in local service rates.[735]

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[730] Sprint comments at 67-70; DoJ comments at 35-47; *accord* LDDS reply at 37.

[731] Sprint comments at 67-70.

[732] NYNEX comments at 6, 21-22; USTA comments at 59-66; Ohio Commission comments at 5[illegible]; Puerto Rico Tel. comments at 11-14.

[733] USTA comments at 56-66.

[734] NYNEX comments at 6, 20-22; *see also* USTA comments at 56-66 (concurring with NYNEX's reasoning).

[735] Puerto Rico Tel. comments at 11-14; *see also* USTA reply comments at 6-8; SBC comments at 77-82 (allowing carriers to use unbundled elements to provide themselves exchange access will result in arbitrage between the price of unbundled network elements and access charges); PacTel reply at 35-36.

349. Disputing our tentative conclusion, a number of incumbent LECs contend that the 1996 Act prohibits interexchange carriers from purchasing unbundled elements to provide exchange access services to themselves and thus avoid payment of access charges to incumbent LECs.[736] Bell Atlantic contends that carriers purchasing unbundled elements from an incumbent LEC must pay access charges for toll calls completed on that incumbent LEC's network. Thus, for example, if a carrier purchases an unbundled loop, and completes toll calls using its own switch and the unbundled loop, it must pay the incumbent LEC from which it purchased the loop both the cost of the loop and the carrier common line charge associated with it.[737]

350. The commenters opposing interexchange carriers' use of unbundled elements to provide interexchange services offer a number of arguments to support their view. For example, they argue that section 251(g) means that incumbent LECs must offer exchange access services under the same terms that they did prior to the passage of the 1996 Act, and the "receipt of compensation" phrase in this section means that interexchange carriers must continue to pay current access charges until they are reformed in an access charge rulemaking proceeding.[738] They also argue that the express language of section 251(i) makes clear that the Commission's section 201 authority to regulate interstate access charges is not overridden by section 251(c)(3). They assert that, if we interpret section 251(c)(3) as allowing carriers to use unbundled elements to provide interexchange services, then our section 201 authority to regulate interstate access charges would be limited, in violation of section 251(i).[739] They further argue that allowing carriers to use unbundled elements to provide exchange access services to themselves, and interexchange services to end users, would be "inconsistent" with the purposes of section 251, which was designed to promote competition for local telephone

[736] BellSouth comments at 30-31, 60-63, reply at 45-46; Bell Atlantic comments at 8-12; Texas Statewide Tel. Cooperative, Inc. comments at 16-17; PacTel comments at 78-80; ALLTEL reply at 6-7; Rural Tel. Coalition reply at 7-11; Ameritech comments at 26, reply at 25; SBC comments at 77-82; PacTel reply at 36; U S West comments at 59-64, reply at 6-8; *see also* NECA comments at 3-6; GTE comments at 74-79 (carriers using unbundled network elements to originate and terminate toll services should be required to charge their interexchange affiliate the same access prices they charge unaffiliated carriers).

[737] Bell Atlantic comments at 8-12.

[738] *See, e.g.*, BellSouth comments at 63-64; Texas Statewide Tel. Cooperative, Inc. comments at 16-17; Bell Atlantic comments at 8-12; Time Warner comments at 60-63; PacTel comments at 78-80, reply at 36; NECA comments at 3-6, reply at 5; SBC comments at 77-82; *see also* USTA comments at 5-8; GTE comments at 74-79; U S West comments at 61; ALLTEL reply at 6-7; Rural Tel. Coalition reply at 7-11.

[739] BellSouth comments at 63-64; USTA comments at 59-66; NYNEX comments at 9-21; Bell Atlantic comments at 8-12; Time Warner comments at 60-63; Puerto Rico Tel. comments at 10-14; Texas Statewide Tel. Cooperative, Inc. comments at 16-17; NECA reply at 5; GTE comments at 74-79; Rural Tel. Coalition reply at 7-11.

services and was not intended as a means to evade access charges.[740] They further argue that such an interpretation would transfer control of interstate access charges to the states.[741]

351. SBC, PacTel and GTE argue that the Senate version of the 1996 Act (which was amended by the Conference Committee) makes clear that section 251 was not intended to supplant the existing access charge regime.[742] PacTel further argues that section 251(c)(3) allows carriers to obtain unbundled elements to "offer" telecommunications services, but not to receive exchange access services.[743] Time Warner contends that none of the provisions of the 1996 Act displace section 201, which grants the Commission authority to establish access charges.[744] NECA contends that the Commission may not change the separations rules that allocate costs between interstate and intrastate jurisdictions without a recommendation from the Joint Board and that it cannot modify or repeal interstate access charge rules without a formal rulemaking. Accordingly, NECA concludes, carriers must still pay interstate access charges.[745] NECA also argues that, because carriers could offer long distance services without using unbundled elements, under the "impairment" standard in section 251(d)(2), incumbent LECs need not provide unbundled elements to enable carriers to offer interexchange services.[746]

352. SBC also argues that allowing carriers to use unbundled elements to provide interexchange services will decrease the incentives for new entrants to invest in competing facilities. As a result, SBC concludes consumers are not likely to benefit because new

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[740] BellSouth comments at 63-64, reply at 45-46; Bell Atlantic reply at 4-6; Texas Statewide Tel. Cooperative, Inc. comments at 16-17; Ameritech reply at 25-26; SBC comments at 77-82 (the terms of section 251 relate only to interconnection between carriers offering local exchange services); Bell Atlantic comments at 8-12; Bay Springs, *et al.* comments at 16; *see also* Minnesota Ind. Coalition comments at 34-38 (interexchange service is not an incumbent LEC exchange service and thus IXCs should not be allowed to circumvent access charges).

[741] BellSouth comments at 63-64; NYNEX comments at 9-21; U S West comments at 59-66; GTE comments at 74-79; PacTel reply at 36; *see also* Rural Tel. Coalition reply at 7-11.

[742] SBC comments at 77-82; GTE comments at 74-79; PacTel comments at 78-80; *see also* NECA comments at 3-6.

[743] PacTel comments at 78-80.

[744] Time Warner comments at 60-63.

[745] NECA comments at 3-6, reply at 3-7.

[746] NECA reply at 5-6.

entrants will price exchange access services just below the levels charged by incumbent LECs.[747] SBC and NECA contend that section 251(d)(3) preserves the authority of states over intrastate access charges.[748] Bell Atlantic contends that Congress could not have intended to overturn the existing access charge regime without expressly stating this.[749] Finally, Bell Atlantic and Ameritech argue that it would be inappropriate to allow carriers to use unbundled elements to provide interexchange services because this would amount to a flash cut reform of access charges before universal service issues are addressed. They reason that, since interstate access charges subsidize local service prices, to allow access pricing to be circumvented would prevent incumbent LECs from meeting their universal service obligations and would, thus, jeopardize current local phone rates.[750] The Rural Telephone Coalition agrees and notes, in particular, that rural ratepayers could be subject to higher local service rates if interexchange carriers are allowed, before proceedings regarding access reform and universal service are completed, to bypass access charges through the purchase of unbundled elements.[751]

353. A number of potential competitors dispute the incumbent LECs' arguments. MCI and the Department of Justice contend that section 251(g) means that the exchange access rules applicable to incumbent LECs before the 1996 Act was passed continue to apply until the Commission issues "superseding regulations." Citing the Joint Explanatory Statement, they assert that the "superseding regulations" referred to are the regulations that the Commission must issue to implement the requirements of section 251. They argue that if section 251 did not affect some change in the rules on access charges, then the "receipt of compensation" language in section 251(g) would be unnecessary.[752]

354. With respect to section 251(i), Cable & Wireless contends that this section merely preserves the Commission's authority under section 201. According to Cable &

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[747] SBC reply at 9-11.

[748] SBC comments at 77-82; NECA comments at 3-6; *see also* NYNEX comments at 9-21 (allowing carriers to use unbundled elements to provide exchange access services to themselves would preempt state access charge policies).

[749] Bell Atlantic comments at 8-12;

[750] Bell Atlantic comments at 8-12, reply at 4-6; Ameritech reply at 24-26 (prices for exchange access services should be rebalanced through a direct examination of universal service issues); *see also* USTA comments at 61.

[751] Rural Tel. Coalition reply at 8.

[752] DoJ comments at 52-53; MCI comments at 77-84. *But cf.* GTE reply at 39-40 (the argument that section 251(g) serves to preserve existing access charges until the Commission adopts regulations implementing section 251 deprives section 251(g) of any meaning because there is no need to preserve existing access charges).

Wireless, this means that carriers can obtain originating and terminating access either by purchasing unbundled network elements under section 251(c)(3) or pursuant to access charge tariffs.[753] MCI argues that section 251(i) preserves the Commission's authority to regulate interstate access charges where incumbent LECs are still providing these services (rather then where new entrants are using unbundled elements.)[754] MCI also argues that allowing carriers to use unbundled elements to provide originating and terminating toll services would not deprive the Commission of authority to set prices for exchange access services because in this proceeding the Commission will direct the states on how to set prices for unbundled elements.[755]

355. LDDS denies that the language of the Senate (as well as House) versions of the 1996 Act indicate that section 251 was not intended to supplant the existing access charge structure, and points to the fact that the language in these bills supporting this argument was not included in the final bill as amended by the Conference Committee.[756] MCI and LDDS argue, respectively, that allowing carriers to use unbundled elements to provide exchange access services is not inconsistent with Congress' intent in writing section 251 because Congress intended for the 1996 Act to create a single set of rules governing relationships between carriers,[757] and the 1996 Act is also about eliminating inefficient pricing in telecommunications services, including inefficient pricing of current access charges.[758] Frontier contends that the statutorily-mandated rates that incumbent LECs may charge for unbundled elements will not be the same as the rates they charge for exchange access services. Frontier argues, however, that the correct response to this is not to limit the purposes for which unbundled elements may be used, but to reform access charge prices to reflect costs.[759] Finally, the Ohio Commission and a number of potential local competitors agree with our tentative conclusion that incumbent LECs cannot assess part 69 access charges

[753] Cable & Wireless comments at 26-32 (arguing same point in connection with section 251(g)); *see also* CompTel comments at 66.

[754] MCI comments at 77-83.

[755] *Id.*

[756] LDDS reply at 32.

[757] MCI comments at 77-83.

[758] LDDS reply at 30-32.

[759] Frontier reply at 9-11.

on top of prices for unbundled network elements because this would allow incumbent LECs to recover fees in excess of costs, in violation of the pricing standards in section 252.[760]

3. Discussion

356. We confirm our tentative conclusion in the NPRM that section 251(c)(3) permits interexchange carriers and all other requesting telecommunications carriers, to purchase unbundled elements for the purpose of offering exchange access services, or for the purpose of providing exchange access services to themselves in order to provide interexchange services to consumers.[761] Although we conclude below that we have discretion under the 1934 Act, as amended by the 1996 Act, to adopt a limited, transitional plan to address public policy concerns raised by the bypass of access charges via unbundled elements, we believe that our interpretation of section 251(c)(3) in the NPRM is compelled by the plain language of the 1996 Act. As we observed in the NPRM, section 251(c)(3) provides that requesting telecommunications carriers may seek access to unbundled elements to provide a "telecommunications service," and exchange access and interexchange services are telecommunications services. Moreover, section 251(c)(3) does not impose restrictions on the ability of requesting carriers "to combine such elements in order to provide such telecommunications service[s]."[762] Thus, we find that there is no statutory basis upon which we could reach a different conclusion for the long term.

357. We also confirm our conclusion in the NPRM that, for the reasons discussed below in section V.J, carriers purchase rights to exclusive use of unbundled loop elements, and thus, as the Department of Justice and Sprint observe, such carriers, as a practical matter, will have to provide whatever services are requested by the customers to whom those loops are dedicated. This means, for example, that, if there is a single loop dedicated to the premises of a particular customer and that customer requests both local and long distance service, then any interexchange carrier purchasing access to that customer's loop will have to offer both local and long distance services. That is, interexchange carriers purchasing unbundled loops will most often not be able to provide solely interexchange services over those loops.

358. We reject the argument advanced by a number of incumbent LECs that section 251(i) demonstrates that requesting carriers using unbundled elements must continue to pay

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[760] Ohio Commission comments at 58; TCC comments at 27-35; Sprint comments at 67-70; MCI comments at 73; DoJ comments at 35-47,52-53; CompTel comments at 39; Excel comments at 4; AT&T reply at 23-24; LDDS reply at 36-38.

[761] *See* NPRM at paras. 159-65.

[762] 47 U.S.C. § 251(c)(3).

access charges. Section 251(i) provides that nothing in section 251 "shall be construed to limit or otherwise affect the Commission's authority under section 201."[763] We conclude, however, that our authority to set rates for these services is not limited or affected by the ability of carriers to obtain unbundled elements for the purpose of providing interexchange services. Our authority to regulate interstate access charges remains unchanged by the 1996 Act. What has potentially changed is the volume of access services, in contrast to the number of unbundled elements, interexchange carriers are likely to demand and incumbent LECs are likely to provide. When interexchange carriers purchase unbundled elements from incumbents, they are not purchasing exchange access "services." They are purchasing a different product, and that product is the right to exclusive access or use of an entire element. Along this same line of reasoning, we reject the argument that our conclusion would place the administration of interstate access charges under the authority of the states. When states set prices for unbundled elements, they will be setting prices for a different product than "interstate exchange access services." Our exchange access rules remain in effect and will still apply where incumbent LECs retain local customers and continue to offer exchange access services to interexchange carriers who do not purchase unbundled elements, and also where new entrants resell local service.[764]

359. We also reject the incumbent LECs' arguments that language contained in bills that were not enacted, or legislative history connected to such bills, demonstrates that carriers cannot purchase access to unbundled elements to provide exchange access services to themselves, for the purpose of providing long distance services to consumers. The incumbent LECs are arguing in effect, that we should read into the current statute a limitation on the ability of carriers to use unbundled network elements, despite the fact that no such limitation survived the Conference Committee's amendments to the 1996 Act. We conclude, however, that the language of section 251(c)(3), which provides that telecommunications carriers may purchase unbundled elements in order to provide a telecommunications service[765] is not ambiguous. Accordingly, we must interpret it pursuant to its plain meaning and not by referencing earlier versions of the statute that were ultimately not adopted by Congress.

360. Moreover, we do not believe that the Joint Explanatory Statement, which describes the House and Senate versions of the statute, and the 1996 Act as enacted, compels a different conclusion. The Joint Explanatory Statement states that the statute incorporates provisions from the Senate Bill and the House Amendment in connection with the

[763] 47 U.S.C. § 251(i).

[764] The application of our exchange access rules in the circumstances described will continue beyond the transition period described at *infra*, Section VII.

[765] 47 U.S.C. § 251(c)(3).

interconnection model adopted in section 251.[766] It notes that the provision in the Senate Bill relating to interconnection did not apply to interconnection arrangements between local and long distance carriers for the purpose of providing long distance services.[767] The text of section 251 of the Senate Bill is consistent with this comment because it states that a local exchange carrier must offer interconnection to other carriers to allow such carriers to provide telephone exchange or exchange access services.[768] The Joint Explanatory Statement, however, does not describe any restriction in the House Amendment regarding the ability of carriers to use unbundled elements to provide long distance service.[769] Indeed, the House Amendment specifically states that carriers may obtain access to unbundled elements to offer "a telecommunications service," which is not limited to telephone exchange and exchange access services.[770] We observe that the Conference Committee incorporated language from the House Amendment and not the Senate Bill in describing in section 251(c)(3) the services carriers may offer using unbundled elements. Accordingly, we do not believe that the Joint Explanatory Statement's description of the provision in the Senate Bill controls our interpretation of section 251(c)(3) as enacted.

361. We also reject the argument that allowing carriers to use unbundled elements to provide originating and terminating toll services is inconsistent with the purposes of the 1996 Act. Congress intended the 1996 Act to promote competition for not only telephone exchange services and exchange access services, but also for toll services. Section 251(b)(3), for example, imposes a duty on LECs to provide dialing parity for telephone toll service.

362. We disagree with the incumbent LECs which argue that section 251(g) requires requesting carriers using unbundled elements to continue to pay federal and state access charges indefinitely. Section 251(g) provides that the federal and state equal access rules applicable before enactment, including the "receipt of compensation," will continue to apply after enactment, "until such restrictions and obligations are explicitly superseded by regulations prescribed by the Commission after such date of enactment."[771] We believe this provision does not apply to the exchange access "services" requesting carriers may provide

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[766] Joint Explanatory Statement at 117-123.

[767] *Id.* at 117.

[768] S. 652, 104th Cong., 1st Sess. § 251 (1995).

[769] Joint Explanatory Statement at 120-121.

[770] H.R. 1555, 104th Cong., 1st. Sess. § 242 (1995).

[771] 47 U.S.C. § 251(g).

themselves or others after purchasing unbundled elements. Rather, the primary purpose of section 251(g) is to preserve the right of interexchange carriers to order and receive exchange access services if such carriers elect not to obtain exchange access through their own facilities or by means of unbundled elements purchased from an incumbent.

363. We affirm our tentative conclusion in the NPRM that, telecommunications carriers purchasing unbundled network elements to provide interexchange services or exchange access services are not required to pay federal or state exchange access charges except as described in section VII, *infra*, for a temporary period. As we explained in the NPRM, if we were to require indefinitely carriers purchasing unbundled elements to also pay access charges, then incumbent LECs would receive compensation in excess of their underlying network costs. This result would be inconsistent with the pricing standard for unbundled elements set forth in section 252(d)(1).[772] In addition, we believe this conclusion is consistent with Congress's overriding goal of promoting efficient competition for local telephony services, because it will allow, in the long term, new entrants using unbundled elements to compete on the basis of the economic costs underlying the incumbent LECs' networks. The facilities used to provide exchange access services are the same as those used to provide local exchange services. We note, however, as discussed below,[773] that certain additional charges are necessary for a specific, limited duration to smooth the transition to a competitive marketplace.

364. We further conclude that when a carrier purchases a local loop for the purpose of providing interexchange services or exchange access services,[774] incumbent LECs may not recover the subscriber line charge (SLC) now paid by end users. The SLC recovers the portion of loop costs allocated to the interstate jurisdiction, but as discussed in Section II.C, *supra*, we conclude that the 1996 Act creates a new jurisdictional regime outside of the current separations process. The unbundled loop charges paid by new entrants under section 251(c)(3) will therefore recover the unseparated cost of the loop, including the interstate component now recovered through the SLC. If end users or carriers purchasing access to

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[772] *See infra*, Section VII. We also note that where new entrants purchase access to unbundled network elements to provide exchange access services, whether or not they are also offering toll services through such elements, the new entrants may assess exchange access charges to IXCs originating or terminating toll calls on those elements. In these circumstances, incumbent LECs may not assess exchange access charges to such IXCs because the new entrants, rather than the incumbents, will be providing exchange access services, and to allow otherwise would permit incumbent LECs to receive compensation in excess of network costs in violation of the pricing standard in section 252(d). *See* 47 U.S.C. § 252. We further note, however, that in these same circumstances the new entrant purchasing access to an unbundled switch element must pay to the incumbent LEC the charges included in the transitional mechanism, described *infra*, at Section VII, for a temporary period.

[773] *See infra*, Section VII, discussing an interim mechanism addressing near-term access charge bypass.

[774] As discussed at *infra*, Section VIII, a different result will occur when interconnecting carriers purchase LEC retail services at wholesale rates under section 251(c)(4).

local loops were required to pay the SLC in this situation, LECs would enjoy double recovery, and the effective price of unbundled loops would exceed the cost-based levels required under section 251(d)(1).

365. Finally, we have considered the economic impact on small incumbent LECs of our conclusion that carriers purchasing access to unbundled network elements to provide interexchange or exchange access services are not required to pay federal or state access charges, except as described in Section VII, *infra*, for a temporary period. For example, the Rural Telephone Coalition argues that rural ratepayers could be subject to higher local service rates if interexchange carriers are allowed to bypass access charges through the purchase of unbundled elements before proceedings regarding access reform and universal service are completed. We reject the Rural Telephone Coalition's argument, however, because our rules, as discussed in Section VII, *infra*, provide for a limited, transitional plan to address public policy concerns raised by the bypass of access charges through unbundled network elements.

J. Specific Unbundling Requirements

366. Having interpreted the standards set forth in the 1996 Act for the unbundling of network elements, we now apply those standards to incumbent LECs' networks. Based on the information developed in this proceeding, we require incumbent LECs to provide unbundled access to local loops, network interface devices, local and tandem switching capability, interoffice transmission facilities, signaling and call-related databases, operations support systems functions, and operator services and directory assistance facilities, as described below. These network elements represent a minimum set of elements that must be unbundled by incumbent LECs. State commissions, as previously noted, are free to prescribe additional elements, and parties may agree on different or additional network elements in the voluntary negotiation process.

1. Local Loops

a. Background

367. In the NPRM, we tentatively concluded that incumbent LECs should be required to unbundle local loops. We sought comment on appropriate requirements for loop unbundling that would promote entry and build upon existing state initiatives, and whether we should adopt specific provisioning requirements for loop unbundling. We also sought comment on our tentative conclusion that incumbent LECs should make available as individual network elements various subloop elements such as the feeder, distribution, and concentration equipment.

b. Comments

368. Virtually all parties that discuss local loop unbundling support the NPRM's tentative conclusion that the local loop is a network element that should be unbundled.[775] These commenters assert that unbundling local loops is consistent with congressional intent,[776] and that doing so is technically feasible.[777] In addition, a number of state commissions note that they already require incumbent LECs to unbundle local loops.[778] In support of loop unbundling, several commenters cite ongoing unbundled loop arrangements between incumbent LECs and competing providers.[779] MFS asserts that the local loop is the most formidable entry barrier to the local exchange market and has the strongest bottleneck characteristics of any network element.[780]

369. There is disagreement, however, over how the local loop should be defined. Some commenters recommend a definition that would encompass the basic loop facilities and

[775] *See, e.g.*, Bell Atlantic comments at 22; ACTA comments at 23; LCI comments at 17; Comcast comments at 20; Matanuska Tel. at 2; ACSI comments at 35; CompTel comments at 30; Illinois Commission comments at 39; U S West comments at 47; Ameritech comments at 36; District of Columbia Commission at 23; Time Warner comments at 44-45; ALTS comments at 26; TIA comments at 9; Sprint comments at 30; NCTA comments at 37; Matanuska Tel. comments at 2; *but see* GTE comments at 33 ("there is no evident need for FCC intervention. Several states are already addressing such matters . . . Moreover, because several carriers are already providing unbundled loops pursuant to state requirements, FCC action is not necessary to assure progress by states").

[776] *See, e.g.*, Hyperion comments at 18; District of Columbia Commission comments at 23; Ameritech comments at 35; NTIA reply at 9-10; SNET comments at 22-23; MFS comments at 42; ACSI comments at 35.

[777] *See, e.g.*, Citizens Utilities comments at 15; PacTel reply at 18; New York Commission comments at 26; SBA comments at 13-14; TIA comments at 9; Texas Commission comments at 9, 17; ACSI comments at 35; NYNEX comments at 64-65; MCI comments at 29; GTE reply at 18. AT&T, for example, asserts that tariffs filed by Ameritech, SNET, NYNEX, SBC, and Bell Atlantic permit the interconnection of a competitor's switch to the incumbent LEC's loop. Letter from Betsy Brady and Bruce Cox, AT&T, to Regina Keeney, Chief, Common Carrier Bureau, FCC, Mar. 21, 1996 (AT&T March 21 Letter) at 18.

[778] *See, e.g.*, Alabama Commission comments at 18; Texas Commission comments at 17; Arizona Commission comments, Exhibit V at 8; New York Commission comments at 26; Oklahoma Commission comments, Attachment A at 13; Iowa Commission comments, Attachment B at 4.

[779] *See, e.g.*, PacTel comments at 52 (noting that it has an agreement to provide MFS with unbundled loops); Ameritech comments at 36 (by the end of 1996, over 45,000 of its unbundled loops will be used by interconnecting carriers); Frontier comments at 14 (Rochester Telephone is currently providing unbundled loops pursuant to tariff.)

[780] MFS comments at 42; *accord* MCI comments at 29; IDCMA reply at 10; Ameritech comments at 35; MECA comments at 38; CompTel comments at 30; ALTS comments at 26.

would not attempt to delineate all loop technologies.[781] Parties that favor a broad definition of local loop suggest some variation on the following: the communications path between the main distribution frame (MDF) in the central office and the network interface device (NID) at the customer premises.[782] USTA, PacTel, and BellSouth contend that such a definition complies with the 1996 Act and allows private negotiations to address the specific network architectures of incumbent LECs and the needs of the particular requesting carriers.[783]

370. Other commenters support a definition of the local loop that would require incumbent LECs to provide, where facilities exist or can be upgraded, five categories of local loops: 2-wire voice-grade analog lines, 2-wire Integrated Services Digital Network (ISDN) lines, 2-wire High-Bit-Rate Digital Subscriber Lines (HDSL), 4-wire HDSL, and 4-wire DS-1 lines.[784] These parties argue that guidance from the Commission on specific loop categories will minimize complex and resource-intensive disputes between incumbent LECs and requesting carriers by avoiding disagreements over whether a particular loop functionality qualifies as a "loop."[785] ITIC contends that the ability of new entrants to provide various digital loop functions, in competition with the incumbent LEC, is likely to stimulate entry by small entities.[786]

371. Connecticut and Texas have established different definitions of unbundled local loop functionality. The Connecticut Department of Public Utility Control has ordered SNET to unbundle 2-wire voice-grade links, 2-wire ISDN links, and 4-wire DS-1 links.[787] The Texas Commission has a similar definition, but specifically excludes DS1, DS3, and fiber loops interfacing with SONET, which the Texas Commission notes can be purchased as

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[781] USTA comments at 29; U S West comments at 47; Wyoming Commission comments at 24; PacTel comments at 52-53; BellSouth comments at 37 n.82; Sprint comments at 30.

[782] U S West comments at 47; Teleport comments at 35-36; MECA comments at 28; Ameritech comments at 36; NYNEX comments at 62 n.123; Frontier comments at 14; USTA comments at 29.

[783] USTA comments at 29; PacTel comments at 52-53; BellSouth comments at 37-38.

[784] MFS comments at 43-44; GST comments at 21-22; ALTS comments at 27; *but see* Bell Atlantic reply at 10 (HDSL links are actually subloop elements and should only be available through a bona fide request process).

[785] MFS comments at 42; GST comments at 20; Intermedia comments at 10.

[786] ITIC comments at 7-8.

[787] Connecticut Commission comments, Att. B at 2.

private line services.[788] Criticizing the approach taken by the Texas Commission, ACSI and Intermedia argue that DS1 and DS3-level loops, as well as analog voice and ISDN loops, should be considered unbundled loops.[789]

372. Potential local competitors contend that an incumbent LEC should be required to modify an existing loop when a requesting carrier seeks to provide a particular type of loop capability that is not technically feasible under the loop's existing architecture.[790] MFS notes that an incumbent LEC typically will take the steps necessary to provide a particular loop functionality, such as ISDN, to a customer when that customer's existing loop is incapable of supporting the requested functionality.[791] Therefore, MFS and GST propose that the loop types available to requesting carriers should match those made available by the incumbent LEC to end-user customers within the same geographic area.[792]

373. A number of potential local competitors request that the Commission adopt specific requirements governing loop unbundling. MFS and GST recommend adoption of a rule that would establish five minutes as the standard interruption interval during which a customer's loop is disconnected from the incumbent LEC's switch and reconnected to a competitor's switch.[793] Opposing MFS's proposed five-minute loop-cutover requirement, GTE argues that the process simply may take longer than five minutes, and that the cutover interval should be addressed through negotiations.[794] Intermedia and Teleport complain that incumbent LECs have abused their control over intra-office cables that connect unbundled loops to the competitor's collocated equipment, and they ask that the Commission prohibit such practices.[795] A number of potential local competitors request that the Commission specifically require incumbent LECs to provide unbundled loops even when the LEC uses an integrated

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[788] Texas Commission comments at 17-18.

[789] ACSI comments, Attachment 1 at 2-3; Intermedia comments at 10.

[790] AT&T comments at 29-30; MFS comments at 43; ALTS comments at 27; GST comments at 21.

[791] MFS comments at 43.

[792] MFS comments at 44; *accord* NYNEX comments at 64.

[793] MFS comments at 45; GST comments at 22-23.

[794] GTE reply at 18-19, n.32.

[795] Intermedia comments at 8-9; Teleport comments at 36-37.

digital loop carrier (IDLC)[796] to deliver a particular loop to the central office. These parties argue that the incumbent LEC could either move the requested loop from the IDLC to another loop carrier, or could employ demultiplexing equipment at the central office.[797]

374. *Subloop unbundling.* Commenters disagree over the Commission's tentative conclusion to identify subloop components as individual network elements. Parties that support a national subloop unbundling requirement argue that subloop unbundling is technically feasible and will enhance competition by allowing a competitor to purchase from the incumbent only those loop facilities that it cannot provide itself.[798] These parties identify the feeder, distribution, and feeder/distribution interface as the appropriate subloop elements.[799] Some parties would add to those components the network interface device, which, in most states, is the demarcation point between incumbent LECs' outside plant and customers' inside wiring.[800] AT&T and MCI contend that the feeder, FDI, and distribution segments of the local loop perform different functions and are, therefore, logically separable.[801] ACSI asserts that, just as different loop architectures have not prevented states from unbundling local loops, different subloop architectures should not prevent subloop unbundling.[802] ITIC, ITAA and Compaq assert that subloop unbundling will facilitate the

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[796] An IDLC carries aggregated loop traffic from the point of concentration in the LEC's loop facilities directly into the switch via a multiplexed circuit.

[797] MFS comments at 45-46 n.58; AT&T reply at 12; GST comments at 23; MCI reply at 30.

[798] LCI comments at 17; MCI comments at 16; ACSI comments at 38-39; TCC comments at 35-37; AT&T comments at 1; Telecommunications Resellers Ass'n comments at 34; *see also* ACSI reply at 17 (ACSI plans to deploy switches and fiber rings that would replace the incumbent LEC's feeder plant, but would still need access to the incumbent LEC's loop distribution and, occasionally, loop concentration and multiplexing functionality).

[799] *See, e.g.*, ACSI comments at 36-37 AT&T comments at 19; TIA comments at 11-12; Cable & Wireless comments at 19; ACTA comments at 19; IDCMA reply at 12-13. Other carriers seek access to digital loop carriers and analog cross-connects. MCI comments at 29; ACTA comments at 29; LCI comments at 17; TCC comments at 37.

[800] *See, e.g.*, MCI comments at 16; IDCMA reply at 12; ACTA comments at 19; GCI comments at 12; LDDS comments at 41-42; MFS comments at 43 n.54; TCC comments at 36; Telecommunications Resellers Ass'n comments at 33; LCI comments at 17.

[801] AT&T comments at 19; MCI comments at 16. According to MCI, the connection is made via a patch panel, where a competitor could easily interconnect its own feeder facilities.

[802] ACSI reply at 14.

provision of high capacity loop functions and lead to innovative new data services.[803] SBA contends that subloop unbundling will facilitate entry by small businesses by allowing them to begin competing in smaller markets, and by minimizing the number of unnecessary elements they would need to purchase.[804]

375. Incumbent LECs argue that subloop unbundling is not critical for potential competitors to enter the local exchange market.[805] Bell Atlantic and GTE note that the comments of parties considered to be potential beneficiaries of subloop unbundling, such as cable operators and CAPs, express little interest in obtaining subloop elements.[806] In addition, Bell Atlantic, Ameritech, and U S West claim that every state commission that has examined the possibility of requiring subloop unbundling has rejected it.[807] Ameritech notes that no competitor has used the bona fide request process that Illinois made available over a year ago for subloop unbundling requests.[808] Ameritech also points out that MFS did not demand subloop unbundling in its recent interconnection agreement with Ameritech.[809] Rural Telephone Coalition and GVNW contend that subloop unbundling could be particularly burdensome to smaller LECs whose networks were not designed for this type of access.[810]

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[803] Letter from Colleen Boothby, Levine, Blaszak, Block & Boothby (on behalf of the Information Technology Industry Council's FCC Working Group), to William F. Caton, Secretary, FCC, July 16, 1996 (ITIC July 16 *Ex Parte*); Letter from Joseph Markoski, Squire, Sanders & Dempsey (on behalf of the Information Technology Association of America) to William F. Caton, Secretary, FCC, July 22, 1996 (ITAA July 19 *Ex Parte*), Letter from Robert Stearns, Senior Vice President, Compaq Computer Corporation, to Susan Ness, Commissioner, FCC, July 23, 1996 (Compaq July 23 *Ex Parte*), Letter from Dhruv Khanna, Senior Communications Attorney, Intel Corporation, to Reed Hundt, Chairman, FCC, July 25, 1996 (Intel July 25 *Ex Parte*).

[804] SBA comments at 14.

[805] *See, e.g.*, NYNEX reply at 30; Bell Atlantic reply at 10; Ameritech comments at 17; SBC reply at 21.

[806] Bell Atlantic reply at 10; GTE reply at 19-20.

[807] Bell Atlantic comments at 24; Ameritech reply at 14-15; U S West comments at 50 n.109.

[808] Ameritech comments at 38 n.62.

[809] Ameritech reply at 17.

[810] Rural Tel. Coalition comments at 32; GVNW comments at 26-27.

376. A majority of commenters, particularly incumbent LECs, argue that subloop unbundling is best addressed in the context of specific requests by competing carriers.[811] AT&T suggests that the Commission could declare that subloop elements are network elements under section 251(c)(3), but not require them to be tariffed until the incumbent LEC receives a request for such elements.[812] Incumbent LECs also argue that subloop unbundling raises significant technical issues, and explain in detail many of the complexities involved.[813] In addition, Sprint and several incumbent LECs maintain that subloop unbundling would raise difficult administrative questions, such as the tracking, pricing, billing, maintenance and repair of subelements.[814] Various parties assert that the costs to reengineer parts of the loop and develop operational support systems for subloop elements will raise the price of subloop elements to prohibitively high levels.[815]

c. Discussion

377. We conclude that incumbent LECs must provide local loops on an unbundled basis to requesting carriers. We note that the Joint Explanatory Statement lists local loops as an example of an unbundled network element.[816] As discussed below, the record demonstrates that it is technically feasible for incumbent LECs to provide access to unbundled local loops, and that such access is critical to encouraging market entry. Further, the competitive checklist

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[811] Bell Atlantic comments at 22; Mass. Commission comments at 7; Cincinnati Bell reply at 7; NTIA reply at 10; GTE comments at 34; NYNEX comments at 67-68; Ameritech comments at 41-42; USTA comments at 32; BellSouth comments at 39 n.85; Sprint comments at 32; *see also* Ameritech reply at 17 (some types of subloop unbundling may be technically feasible but are difficult to identify in the absence of specific requests).

[812] AT&T reply at 17.

[813] Letter from Sandra Wagner, Director - Federal Regulatory, SBC Communications, to William F. Caton, Acting Secretary, FCC, June 4, 1996 (SBC June 4 *Ex Parte*); *see also* PacTel reply at 18 (access at the NID would require incumbent LECs to construct a separate NID for use by the requesting carrier to preserve network security and customer privacy); Ameritech reply at 19 (NID unbundling ignores function of "overvoltage protection" provided by NID).

[814] Sprint comments at 30-31; GTE comments at 33-34; NYNEX comments at 68-69; Bell Atlantic comments at 24; U S West comments at 50-51; BellSouth comments at 39; Ameritech comments at 41.

[815] GTE comments, Attachment 1 at 1; Sprint comments at 32; U S West reply at 25; NYNEX comments at 69; *see also* Ameritech comments, Attachment 1 at 4 (service activation cost for subloop elements would be 53 percent higher than for activation of an unbundled loop).

[816] Joint Explanatory Statement at 116.

contained in section 271 requires BOCs to offer unbundled loops separate from switching as a precondition to entry into the in-region, interLATA services market.[817]

378. Requiring incumbent LECs to make available unbundled local loops will facilitate market entry and improve consumer welfare. Without access to unbundled local loops, new entrants would need to invest immediately in duplicative facilities in order to compete for customers. Such investment and building would likely delay market entry and postpone the benefits of local telephone competition for consumers. Moreover, without access to unbundled loops, new entrants would be required to make a large initial sunk investment in loop facilities before they had a customer base large enough to justify such an expenditure.[818] This would increase the risk of entry and raise the new entrant's cost of capital. By contrast, the ability of a new entrant to purchase unbundled loops from the incumbent LEC allows the new entrant to build facilities gradually, and to deploy loops for its customers where it is efficient to do so. Moreover, in some areas, the most efficient means of providing competing service may be through the use of unbundled loops. In such cases, preventing access to unbundled loops would either discourage a potential competitor from entering the market in that area, thereby denying those consumers the benefits of competition, or cause the competitor to construct unnecessarily duplicative facilities, thereby misallocating societal resources.

379. Section 251(c)(3) requires incumbent LECs to provide access to unbundled elements "at any technically feasible point."[819] The vast majority of commenters, including incumbent LECs, agree with our tentative conclusion that it is technically feasible to provide access to unbundled local loops,[820] and a number of commenters identify the main distribution frame in a LEC central office as an appropriate access point.[821] Moreover, access to unbundled loops is currently provided by several LECs pursuant to state unbundling

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[817] 47 U.S.C. § 271(c)(2)(B).

[818] As of year end 1995, Class A carriers reported $268 billion of total plant in service, of which $229 billion was classified as network plant. Local loop plant comprises approximately $109 billion of total plant in service, which represents 41 percent of total plant in service and 48 percent of network plant. *See* 1995 ARMIS Report 43-04.

[819] 47 U.S.C. § 251(c)(3).

[820] *See, e.g.*, PacTel reply at 18; New York Commission comments at 26; SBA comments at 13-14; TIA comments at 9; GTE reply at 18; NYNEX comments at 64-65.

[821] *See, e.g.*, Bell Atlantic comments, Albers Attachment at 6-8; Ameritech comments at 36.

requirements.[822] Thus, we conclude that it is technically feasible for incumbent LECs to provide access to unbundled local loops at, for example, a central office distribution frame.

380. We further conclude that the local loop element should be defined as a transmission facility between a distribution frame, or its equivalent, in an incumbent LEC central office, and the network interface device at the customer premises. This definition includes, for example, two-wire and four-wire analog voice-grade loops, and two-wire and four-wire loops that are conditioned to transmit the digital signals needed to provide services such as ISDN, ADSL, HDSL, and DS1-level signals.[823] We note that a number of parties proposed definitions of the local loop that encompassed some or all of these loop types.[824] In addition, we agree with ITIC that the ability to offer various digital loop functions in competition with incumbent LECs may be particularly beneficial to small entities by allowing them to serve niche markets.[825]

381. Incumbent LECs are required to provide access to these transmission facilities only to the extent technically feasible. That is, if it is not technically feasible to condition a loop facility to support a particular functionality, the incumbent LEC need not provide unbundled access to that loop so conditioned. For example, a local loop that exceeds the maximum length allowable for the provision of a high-bit-rate digital service could not feasibly be conditioned for such service.[826] Such a situation may necessitate a request for subloop elements.[827] Nevertheless, section 251(c)(3) does not limit the types of

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[822] *See, e.g.*, Ameritech comments at 36 (by the end of 1996, over 45,000 of its unbundled loops will be used by interconnecting carriers); Frontier comments at 14 (Rochester Telephone is currently providing unbundled loops pursuant to tariff); *see also* Alabama Commission Comments at 18; Texas Commission comments at 17; New York Commission comments at 26; Arizona Commission comments, Exh. V at 8.

[823] ISDN (Integrated Services Digital Network) at the Basic Rate Interface level permits the transmission of digital signals over the loop at the rate of 144 kbps, which provides two standard 64 kbps voice or data channels and a 16 kbps data channel. ISDN at the Primary Rate Interface permits 23 standard 64 kbps channels plus one 16 kbps data channel. ADSL (Asynchronous Digital Subscriber Line) is a transmission path that facilitates 6 Mbps digital signal downstream and 640 kbps digital signal upstream, while simultaneously carrying an analog voice signal. Two-wire HDSL (High-bit-rate Digital Subscriber Line) permits the transmission of a 768 kbps digital signal over a copper loop, while four-wire HDSL allows the transmission of 1.544 Mbps over two two-wire pairs.

[824] *See, e.g.*, MFS comments at 43-44; ALTS comments at 27; GST comments at 21-22; ACSI comments, Att. 1 at 2.

[825] ITIC comments at 7-8.

[826] Such loop conditioning may involve removing load coils or bridged taps that interfere with the transmission of digital signals.

[827] *See, e.g.*, Bell Atlantic reply at 10 n.11.

telecommunications services that competitors may provide over unbundled elements to those offered by the incumbent LEC.

382. Our definition of loops will in some instances require the incumbent LEC to take affirmative steps to condition existing loop facilities to enable requesting carriers to provide services not currently provided over such facilities. For example, if a competitor seeks to provide a digital loop functionality, such as ADSL, and the loop is not currently conditioned to carry digital signals, but it is technically feasible to condition the facility, the incumbent LEC must condition the loop to permit the transmission of digital signals. Thus, we reject BellSouth's position that requesting carriers "take the LEC networks as they find them" with respect to unbundled network elements.[828] As discussed above, some modification of incumbent LEC facilities, such as loop conditioning, is encompassed within the duty imposed by section 251(c)(3).[829] The requesting carrier would, however, bear the cost of compensating the incumbent LEC for such conditioning.[830]

383. We further conclude that incumbent LECs must provide competitors with access to unbundled loops regardless of whether the incumbent LEC uses integrated digital loop carrier technology, or similar remote concentration devices, for the particular loop sought by the competitor. IDLC technology allows a carrier to aggregate and multiplex loop traffic at a remote concentration point and to deliver that multiplexed traffic directly into the switch without first demultiplexing the individual loops. If we did not require incumbent LECs to unbundle IDLC-delivered loops, end users served by such technologies would not have the same choice of competing providers as end users served by other loop types. Further, such an exception would encourage incumbent LECs to "hide" loops from competitors through the use of IDLC technology.

384. We find that it is technically feasible to unbundle IDLC-delivered loops. One way to unbundle an individual loop from an IDLC is to use a demultiplexer to separate the unbundled loop(s) prior to connecting the remaining loops to the switch. Commenters identify a number of other methods for separating out individual loops from IDLC facilities,

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[828] BellSouth comments at 39.

[829] *See supra* Section IV.D., interpreting the term "technically feasible." *See also* MFS comments at 43 (arguing that incumbent LECs condition loops in order to provide particular digital loop functionalities to their customers).

[830] *See supra* Section VII, discussing the recovery of costs under section 252(d)(1).

including methods that do not require demultiplexing.[831] Again, the costs associated with these mechanisms will be recovered from requesting carriers.

385. We decline to define a loop element in functional terms, rather than in terms of the facility itself. Some parties advocate defining a loop element as merely a functional piece of a shared facility, similar to capacity purchased on a shared transport trunk.[832] According to these parties, this definition would enable an IXC to purchase a loop element solely for purposes of providing interexchange service. While such a definition, based on the types of traffic provided over a facility, may allow for the separation of costs for a facility dedicated to one end user, we conclude that such treatment is inappropriate. Giving competing providers exclusive control over network facilities dedicated to particular end users provides such carriers the maximum flexibility to offer new services to such end users. In contrast, a definition of a loop element that allows simultaneous access to the loop facility would preclude the provision of certain services in favor of others. For example, carriers wishing to provide solely voice-grade service over a loop would preclude another carrier's provision of a digital service, such as ISDN or ADSL, over that same loop.[833] We note that these two types of services could be provided by different carriers over, for example, separate two-wire loop elements to the same end user.

386. Incumbent LECs must provide cross-connect facilities, for example, between an unbundled loop and a requesting carrier's collocated equipment, in order to provide access to that loop. As we conclude in section IV.D, above, an incumbent LEC must take the steps necessary to allow a competitor to combine its own facilities with the incumbent LEC's unbundled network elements. We highlight this requirement for unbundled loops because of allegations by competitive providers that incumbent LECs have imposed unreasonable rates, terms, and conditions for such cross-connect facilities in the past.[834] Incumbent LECs may recover the cost of providing such facilities in accordance with our rules on the costs of interconnection and unbundling. Charges for all such facilities must meet the cost-based standard provided in section 252(d)(1), and the terms and conditions of providing these facilities must be reasonable and nondiscriminatory under section 251(c)(3).

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[831] Under more recent standards for IDLC facilities, a competitor's loop traffic could be separated from the incumbent LEC's loop traffic without the use of multiplexers. *See, e.g.*, MCI comments at 30 (IDLC loops can be moved onto other loop carrier links, or alternatively, can be removed from the mulitiplexed signal through "hair pinning").

[832] *See, e.g.*, Cable & Wireless comments at 26-27; ACTA comments at 17.

[833] Digital services such as ISDN and ADSL occupy the same frequency spectrum on a loop as ordinary voice-grade services.

[834] Intermedia comments at 8-9; Teleport comments at 36-37.

387. At this time, we decline to adopt additional terms and conditions, such as the five-minute loop cutover requirement proposed by MFS, for loop provisioning. We agree with commenters who contend that the provisioning of unbundled local loops must be subject to close scrutiny to ensure that incumbent LECs do not delay loop cutover or otherwise complicate the acquisition of loops by a competitor. We conclude, however, that the rules we adopt in the Access to Unbundled Network Elements section that require nondiscriminatory terms and conditions for provisioning, billing, testing, and repair of unbundled elements, and the availability of electronic ordering systems, adequately address these concerns. We will continue to review and revise our rules in this area as necessary.

388. Section 251(d)(2)(A) requires the Commission to consider whether "access to such network elements as are proprietary in nature is necessary."[835] Most parties did not identify any proprietary concerns associated with providing unbundled access to local loops. Ericsson notes that some "active" loop equipment, such as channel banks and remote terminal equipment, is often proprietary in nature, and that manufacturers would require time to modify such equipment to create end-to-end network compatibility on a national basis.[836] Ericsson does not contend, however, that any proprietary information would be revealed if loops using such equipment were unbundled, or that use of such equipment should prevent loop unbundling in general.[837] Thus, we conclude that loop elements are, in general, not proprietary in nature under our interpretation of section 251(d)(2)(A). Even if loop elements were proprietary in nature, however, Ericsson does not meet the second consideration in our section 251(d)(2)(A) standard, which requires a showing that a new entrant can offer the proposed telecommunications service through the use of other, nonproprietary elements in the incumbent LEC's network.[838] Ericsson merely contends that manufacturers may need time to establish compatibility between its proprietary equipment and equipment of other manufacturers.[839] Therefore, we find that Ericsson's concerns do not justify withholding unbundled loops from requesting carriers pursuant to section 251(d)(2)(A).

389. Section 251(d)(2)(B) directs the Commission to consider whether "the failure to provide access to such network elements would impair the ability of the telecommunications

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[835] 47 U.S.C. § 251(d)(2)(A).

[836] Ericsson comments at 4.

[837] Ericsson's comments were in response to a question in the NPRM seeking comment on the need to accommodate new loop technologies or services. Ericsson comments at 4.

[838] *See supra* Section V.E.3.

[839] Ericsson comments at 4-5.

carrier seeking access to provide the services that it seeks to offer."[840] We have interpreted the term "impair" to mean either increased cost or decreased service quality that would result from using network elements of the incumbent LEC other than the one sought.[841] Commenters do not identify alternative facilities that would fulfill requesting carriers' need for transmission between the central office and the customer premises at the same cost and same quality of service. Accordingly, we conclude that competitors' ability to provide telephone exchange, exchange access, or other telecommunications services would be significantly impaired if they did not have the opportunity to purchase unbundled loops from incumbent LECs.

390. As a general matter, we believe that subloop unbundling could give competitors flexibility in deploying some portions of loop facilities, while relying on the incumbent LEC's facilities where convenient. For example, a competitor may seek to minimize its reliance on the LEC's facilities by combining its own feeder plant with the incumbent LEC's distribution plant.[842] In addition, some high bandwidth services, such as ADSL, cannot be provided over long loop lengths. ITIC, Compaq, and Intel assert that subloop unbundling would lead to innovative new data services.[843] In these situations, carriers would need access at points along the loop closer to the customer premises. The record presents evidence primarily of logistical, rather than technical, impediments to subloop unbundling.[844] Several LECs and USTA, for example, assert that incumbent LECs would need to create databases for identifying, provisioning, and billing for subloop elements.[845] Further, incumbent LECs argue that there is

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[840] 47 U.S.C. § 251(d)(2)(B).

[841] *See supra* Section V.E.3.

[842] Subloop unbundling could have network efficiency advantages as well. One party notes that subloop unbundling could allow packetized data traffic to be shifted to a data network, rather than flowing through the circuit-switched network portions of the public switched network. *See* ITIC July 16 *Ex Parte*.

[843] ITIC July 16 *Ex Parte*, ITAA July 22 *Ex Parte*, Compaq July 23 *Ex Parte*, Intel July 25 *Ex Parte*. ITAA contends that subloop unbundling would allow data and other traffic to be routed before it reaches an incumbent LEC's central office switch. According to ITAA, such routing would moot incumbent LECs' argument that traffic from the Internet and other on-line services is negatively impacting their switches. ITAA July 19 *Ex Parte*.

[844] *See, e.g.*, Sprint comments at 30-31; GTE comments at 33-34; NYNEX comments at 68-69; Bell Atlantic comments at 24 (all discussing a variety of tracking, billing, and maintenance issues that would be raised by subloop unbundling).

[845] USTA comments at 31; NYNEX comments at 69; Ameritech comments at 41; BellSouth comments at 39; U S West comments at 50.

insufficient space at certain possible subloop interconnection points.[846] We note that these concerns do not represent "technical" considerations under our interpretation of the term "technically feasible."[847]

391. Nonetheless, we decline at this time to identify the feeder, feeder/distribution interface (FDI), and distribution components of the loop as individual network elements. We find that proponents of subloop unbundling do not address certain technical issues raised by incumbent LECs concerning subloop unbundling. Incumbent LECs contend that access by a competitor's personnel to loop equipment necessary to provide subloop elements, such as the FDI, raise network reliability concerns for customers served through that FDI.[848] SBC, for example, asserts that access to its loop concentration points by competitors would increase the risk of error by a competitor's technicians that may disrupt service to customers of one or both carriers.[849] U S West contends that the potential for poor technical implementation of subloop interconnection and the lack of overall responsibility for loop performance is very likely to degrade overall service quality.[850] Proponents of subloop unbundling do not adequately respond to these arguments by incumbent LECs. As discussed above, we have determined that we must take into account specific, demonstrable claims regarding network reliability in determining whether to identify any particular component as an element that must be unbundled. Therefore, we believe that, at this stage, based on the current record evidence, the technical feasibility of subloop unbundling is best addressed at the state level on a case-by-case basis at this time.[851] Information developed by the parties in the context of a specific request for subloop unbundling will provide a useful framework for addressing the loop maintenance and network reliability matters that we have identified. Based on actions taken by the states or other future developments, and on the importance of subloop unbundling in light of technological advancements, we intend to revisit the specific issue of subloop unbundling sometime in 1997.

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[846] Bell Atlantic comments at 24; SBC comments at 38; NYNEX comments at 66.

[847] *See supra* Section IV.D.

[848] BellSouth comments at 39; NYNEX comments at 66; SBC comments at 39; U S West comments at 52 n.113; PacTel comments at 18.

[849] SBC comments at 39.

[850] U S West comments at 52 n.113.

[851] We encourage states to pursue subloop unbundling in response to requests for subloop elements by competing providers.

392. We require incumbent LECs to offer unbundled access to the network interface device (NID),[852] as a network element, as described below. When a competitor deploys its own loops, the competitor must be able to connect its loops to customers' inside wiring in order to provide competing service, especially in multi-tenant buildings. In many cases, inside wiring is connected to the incumbent LEC's loop plant at the NID. In order to provide service, a competitor must have access to this facility. Therefore, we conclude that a requesting carrier is entitled to connect its loops, via its own NID, to the incumbent LEC's NID.[853]

393. Pursuant to section 251(c)(3), we find that this arrangement clearly is technically feasible. Ameritech notes that it currently maintains such connections with competitors that have deployed their own loop facilities.[854] This is persuasive evidence that unbundled access at the NID, in this manner, does not raise network reliability concerns. Under section 251(d)(2)(A), the record contains no evidence of proprietary concerns with unbundled access to the NID. In addition, under our interpretation of the "impair" test of section 251(d)(2)(B), commenters do not contend that new entrants could obtain the same functionality at the same cost and service quality through other network elements of the incumbent LEC. Moreover, the record indicates that certain network architectures used by new entrants, such as fiber rings, can most efficiently connect end users to the new entrant's switching office without use of the incumbent LEC's facilities.[855] Thus, we conclude that the unavailability of access to incumbent LECs' NIDs would impair the ability of carriers deploying their own loops to provide service. Further, we believe that unbundled access to the NID will facilitate entry strategies premised on the deployment of loops. As discussed in section VII, above, the new entrant bears the costs of connecting its NID to the incumbent LEC's NID.

394. We do not require an incumbent LEC to permit a new entrant to connect its loops directly to the incumbent LEC's NID. MCI contends that directly connecting its loops to incumbent LECs' NIDs is "[t]he only practical solution" for gaining access to inside

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[852] The NID is a cross-connect device used to connect loop facilities to inside wiring.

[853] We emphasize that access to inside wiring through the incumbent LEC's NID does not entitle a competitor to deliver its loop facilities into a building without the permission of the building owner. Similarly, access to an incumbent LEC's NID does not entitle the competitor to the riser and lateral cables between the NID and individual units within the building, which may be owned or controlled, for example, by the premises owner.

[854] Letter from James K. Smith, Director-Federal Relations, Ameritech, to William F. Caton, Acting Secretary, FCC, July 15, 1996 (Ameritech July 15 *Ex Parte*).

[855] Letter from Don Sussman, MCI, to William F. Caton, FCC, July 12, 1996 (MCI July 12 *Ex Parte*).

wiring.[856] According to MCI, there is no extra wiring to connect the incumbent LEC's NID to the new entrant's NID.[857] Ameritech demonstrates, however, that it currently provides access to inside wiring through the type of arrangement that MCI asserts is not practical -- that is, by connecting a new entrant's loops to inside wiring via the new entrant's NID and Ameritech's NID. MCI does not demonstrate that its ability to provide competing service is unreasonably limited by the arrangements explained by Ameritech.

395. The record contains conflicting evidence on the technical feasibility of requiring incumbent LECs to permit competitors to connect their loops directly to incumbent LECs' NIDs. Ameritech asserts that such a direct connection would leave Ameritech's unused loops without overvoltage protection.[858] MCI argues that overvoltage protection is provided through the incumbent LEC's "protector module" that is separate from the NID.[859] Ameritech responds that its NIDs are integrated units providing both overvoltage protection and a demarcation point, and that these two functions of the NID are "inseverable."[860] AT&T contends direct access to incumbent LECs NIDs is technically feasible. According to AT&T, if a competitor connects its loops directly to the incumbent LEC's NID, the incumbent LEC's loops remain connected to the grounding equipment that protects against overvoltage.[861] According to AT&T, when the competitor does not use spare terminals on the NID, the competitor would be required to ground the incumbent LEC's unused loops to protect against overvoltage.[862]

396. We find that the record in this proceeding does not permit a determination on the technical feasibility of the direct connection of a competitor's loops to the incumbent LEC's NID. Our requirement of a NID-to-NID connection addresses the most critical need of competitors that deploy their own loops -- obtaining access to the inside wiring of the

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[856] MCI July 12 *Ex Parte* at 6.

[857] *Id.* at 5.

[858] Ameritech July 15 *Ex Parte* at 5.

[859] Letter from Donald Evans, Vice President - Federal Regulatory Affairs, MCI, to William F. Caton, Secretary, FCC, July 16, 1995 (MCI July 16 *Ex Parte*).

[860] Letter from James Smith, Director-Federal Relations, Ameritech, to William F. Caton, Acting Secretary, FCC, July 24, 1996 (Ameritech July 24 *Ex Parte*).

[861] Letter from Bruce Cox, Government Affairs Director, AT&T, to William F. Caton, Acting Secretary, FCC, July 18, 1996 (AT&T July 18 *Ex Parte*).

[862] *Id.*

building. We recognize, however, that competitors may benefit by directly connecting their loops to the incumbent LEC's NID, for example, by avoiding the cost of deploying NIDs.[863] States should determine whether direct connection to the NID can be achieved in a technically feasible manner in the context of specific requests by competitors for direct access to incumbent LECs' NIDs.[864]

2. Switching Capability

a. Background

397. In the NPRM, we tentatively concluded that incumbent LECs should be required to make available local switching capability as an unbundled network element. We sought comment on how a local switching element should be defined, and we identified two possible models: the switch "platform" approach, which would entitle and require a requesting carrier to purchase all of the features and functions of the switch on a per-line basis and the port approach used by the New York Commission, which offers local switching capability through the purchase of a port at a retail rate. We also sought comment on other definitions of a local switching element. In addition, we requested that commenters address whether vertical switching functions, such as those enabling the provision of custom local area signaling service (CLASS) features and call waiting, should be considered individual network elements separate from the basic switching functionality.

b. Comments

398. The vast majority of commenters support the Commission's tentative conclusion that local switching should be an unbundled network element.[865] Such parties note that the section 271 competitive checklist includes unbundled local switching and the legislative history of the 1996 Act identifies local switching as a possible element.[866] Several potential

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[863] *Id.* at 1.

[864] Ameritech July 15 *Ex Parte* at 5-6.

[865] *See, e.g.*, GCI comments at 12; TIA comments at 11-12; Citizens Utilities comments at 15; Intermedia comments at 13; Bay Springs, *et al.* comments at 18; Wyoming Commission comments at 22.

[866] *See, e.g.*, Ameritech comments at 43; LDDS comments at 44; USTA comments at 32; BellSouth comments at 40.

local competitors contend that unbundled local switching functionality is very important to promote entry into the local exchange market.[867]

399. Some incumbent LECs support a definition of local switching as a switching port.[868] These LECs favor a definition of a port that focuses on *providing access* to additional switching features, rather than on the switching features themselves.[869] PacTel, for example, asserts that a port provides dialtone and a telephone number, but does not include local usage or vertical features such as custom calling.[870] Bell Atlantic contends that the 1996 Act requires incumbent LECs to *provide access* to unbundled network elements, and that a switch port meets this directive by providing access to the switch.[871]

400. Sprint, USTA, SBC, NYNEX, and MECA, on the other hand, favor a definition of the unbundled local switching element that includes the basic function of connecting network access lines to other lines or trunks.[872] These parties would expressly exclude from this local switching definition vertical features such as custom calling.[873] Sprint and SBC argue that vertical features are retail services offered to end users today, and therefore, must be purchased by the competitor under the wholesale rate provisions of the Act.[874] USTA

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[867] LDDS reply at 18; TIA comments at 18; AT&T March 21 Letter 18 at 17-18; *but see* SBC reply at 23 ("Given that 'high margin' services are made possible through the switch, new entrants will likely purchase their own switching facilities.").

[868] BellSouth comments at 41; Cincinnati Bell comments at 18; U S West comments at 54-55; Bell Atlantic comments at 25; GTE comments at 37.

[869] BellSouth comments at 41; Cincinnati Bell comments at 18; USTA comments at 33; U S West comments at 54-55; Bell Atlantic comments at 25; GTE comments at 37; NYNEX comments at 69-70.

[870] PacTel comments at 55 (local usage should be excluded from the definition of a port because it is a tariffed service and should therefore be available to requesting carriers only through resale); *see also* SBC comments at 43 (the port should be separate from the switch).

[871] Bell Atlantic reply at 12.

[872] Sprint comments at 34; USTA reply at 16-17; SBC reply at 20; NYNEX reply at 31; MECA comments at 29.

[873] Sprint comments at 36; USTA reply at 16; SBC reply at 20; MECA comments at 29. Examples of vertical features include call waiting and three-way calling, which are custom calling features, and caller ID and call forwarding, which are custom local area signaling service (CLASS) features that rely on the transmission of signaling information between the calling and called parties.

[874] USTA reply at 16-17; PacTel reply at 19; SBC reply at 21; *see also* Sprint comments at 37-38 (although it is not technically feasible to unbundle vertical services, the costs of such services can be identified and should be excluded from the charge for the local switching element).

suggests that this approach best comports with the Act and is a reasonable compromise between the more limited port approach and the switching platform proposal.[875]

401. A number of commenters support a definition of the local switch that has been referred to as the "local switching platform."[876] These parties recommend defining the local switching element as encompassing all functions performed by the local switch, including basic switching functionality and vertical features.[877] Supporters of the switching platform approach contend that, because the requesting carrier would pay for all local switching functionality on a per-line basis, it would have the incentive and ability to combine features and services more effectively than it would under more limited definitions of the local switching element.[878]

402. LDDS and AT&T argue that the switch platform approach is more consistent with the Act than the port approach. These carriers argue that, under the port approach, local switching has not been "unbundled" because a competitor cannot combine a port with loop and trunking facilities to provide telephone service. Instead, the competitor must also purchase basic switching functionality from the incumbent LEC at wholesale rates.[879] According to AT&T and LDDS, the switching platform does not raise technical feasibility problems because requesting carriers would not have direct access to the switching hardware or software. Instead, the requesting carrier would "designate" the features to be associated with its own lines and the routing of its customers' calls, and the incumbent LEC would actually perform that function.[880]

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[875] USTA reply at 16.

[876] MCI comments at 30-32; AT&T comments at 20-21; LDDS comments at 44-46; Texas Commission reply at 8; TCC comments at 37-38; ACTA comments at 18-20; ACSI comments at 40-41; CompTel comments at 33-35; Ad Hoc Telecommunications Users Committee reply at 8.

[877] Functions listed by proponents of the switch platform include local usage, exchange access, access to operators, announcements, recognition of customer requests for service, obtaining call-specific information, data analysis, selection of traffic routes, call signaling, recording for billing and network management, tests required for network maintenance and call processing, custom calling features (*e.g.* call forwarding, call waiting), and CLASS features (*e.g.* caller ID, call return). LDDS comments at 44; ACSI comments at 40-41; MCI comments at 30. AT&T and LDDS also propose to include in the local switching definition Centrex, carrier identification code determination, and access to databases and adjunct processors for the purpose of offering advanced intelligent network (AIN) services. LDDS comments at 45; AT&T Mar. 21 Letter at 18.

[878] LDDS comments at 45; AT&T comments at 21.

[879] LDDS comments at 55; AT&T reply at 18. The Texas Commission notes that Ameritech's unbundled port tariffs in Illinois expressly exclude basic switching functionality. Texas Commission comments at 13-14.

[880] AT&T reply at 19; LDDS reply at 19.

403. Opponents of the local switching platform assert that implementing a switch platform would cause technical problems. U S West and GVNW argue that the only technically feasible way to implement the switching platform would be physically to partition the switch which, according to U S West, would greatly reduce the switch's efficiency.[881] AT&T characterizes this argument as frivolous and asserts that physical partitioning of the switch has not been proposed by any party.[882] NYNEX contends that incumbent LECs would need to add capacity to their switches to accommodate competitors' demand for switch platforms.[883] AT&T responds that, because the requesting carrier is likely to be serving former customers of the incumbent LEC, the switching resources needed by the incumbent and competitor, at least initially, are likely to balance out.[884] GTE, U S West, and USTA also argue that the switching platform approach would discourage incumbent LECs from upgrading their switches because all new features would be immediately available to competitors at a discounted rate.[885]

404. Incumbent LECs argue that the switch platform would allow a requesting carrier to circumvent the statutory scheme that requires incumbent LECs to offer local exchange service at wholesale rates for resale by requesting carriers.[886] These commenters also contend that vertical features, such as custom calling and call waiting, are retail services, not network elements, and should be obtained by requesting carriers pursuant to section 251(c)(4).[887] Ad Hoc Telecommunications Users maintains that the switch platform approach raises entry costs by forcing competitive providers to purchase switching functions they may never need or use.[888] MCI and TCC contend that the local switching element should specifically include vertical features such as CLASS features and custom calling because incumbent LECs do not

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[881] U S West comments at 55.

[882] AT&T reply at 19.

[883] NYNEX reply at 32.

[884] Letter from Bruce Cox, Government Affairs Director, AT&T, to William Caton, Secretary, FCC, June 28, 1996 (AT&T June 28 *Ex Parte*).

[885] GTE comments at 38; SBC comments at 43; USTA reply at 17.

[886] PacTel comments at 54; Bell Atlantic comments at 26; GTE reply at 20; *see also* Sprint comments at 38 (the local switching platform does not create incentives for competitors to build out facilities).

[887] USTA comments at 34-35; Cincinnati Bell comments at 18.

[888] Ad Hoc Telecommunications Users Committee comments at 23.

incur the costs for these services on a usage basis.[889] ACSI and LCI also support the availability of vertical switching functionalities on an unbundled basis.[890]

405. Incumbent LECs contend that the switch platform approach is impractical because standard measures of switching, such as the number of line or trunk terminations, would not capture the dynamic nature of switching.[891] In response, MCI and LDDS state that a requesting carrier would commit to purchasing a minimum level of trunk port capacity and a minimum level of busy hour switch capacity for at least one year.[892] Several BOCs and Sprint contend that the Commission should not adopt the switch platform because there is insufficient understanding of what it would entail.[893]

406. Most parties support the Commission's proposal to require incumbent LECs to unbundle tandem switching as a network element.[894] AT&T notes that the availability of unbundled tandem switches is critical to the connection of its own switches to incumbent LECs' switches.[895] AT&T argues that unbundled tandem switching is technically feasible because IXCs currently interconnect with incumbent LECs' tandem switches through standard specifications.[896] Other commenters indicate that tandem switching is available today through access tariffs, and therefore it is unnecessary for the Commission to unbundle tandem switching.[897] SBC states that the Commission should not apply the same unbundling

[889] MCI comments at 31; TCC comments at 31.

[890] ACSI comments at 41; LCI comments at 18.

[891] USTA comments at 34; MECA comments at 30.

[892] MCI comments at 30; LDDS comments at 44-45.

[893] Ameritech comments at 45; SBC comments at 42; Bell Atlantic reply at 11; Sprint comments at 39; NYNEX reply at 31.

[894] *See, e.g.*, AT&T comments at 22; New York Commission comments at 27; U S West comments at 48; MCI comments at 17; Competition Policy Institute comments at 16; GST comments at 24; TIA comments at 13.

[895] AT&T Mar. 21 Letter at 21.

[896] AT&T comments at 22; ALTS comments at 30.

[897] Bell Atlantic comments at 27; TIA comments at 13.

requirements for tandem and end office switches because tandem switches only offer trunk interfaces and do not contain switching features on a per-line basis.[898]

407. AT&T, MCI, and TCC also ask that the local switching element be defined to include data switching by packet switches.[899] MCI asserts that it is technically feasible for the requesting carrier's own facilities to interface with an incumbent LEC's packet switch through a connection at a DS1 frame or patch panel.[900] PacTel supports the unbundling of data switches as network elements.[901]

408. Several potential local competitors argue that the Commission should require incumbent LECs, in providing unbundled local switching, to enable requesting carriers to designate the trunk assignment for its local exchange customers.[902] CompTel states that this would maximize competitors' ability to create new services.[903] PacTel argues that it is not technically feasible to route local calls originating on unbundled loops onto particular outgoing trunks connected to that switch.[904]

409. ALTS argues that incumbent LECs should be required to make local switching available so that all signaling information necessary to complete a call is passed to the connecting carrier, such as an IXC or a competing provider.[905] The Wyoming Commission is considering adoption of a rule that would require incumbent LECs to pass on signaling

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[898] SBC comments at 34 n.67.

[899] AT&T comments at 20; TCC comments at 39; MCI comments at 18.

[900] MCI comments at 18.

[901] PacTel reply at 21.

[902] ALTS comments, Attachment A at 20-21; LCI comments at 18; TCC reply at 17; *see also* CompTel comments at 34 (the Commission should enable requesting carriers to establish routing parameters for the following categories of traffic: domestic interLATA, presubscribed intraLATA, non-presubscribed intraLATA, 800/888, 900, interLATA operator traffic, intraLATA/0-/0+ operator traffic, and international direct dialed).

[903] CompTel comments at 34.

[904] PacTel reply at 20.

[905] ALTS comments at 29 (claiming that some carriers strip certain signaling information and end offices and tandem offices, thereby undermining the ability of new entrants to receive and aggregate traffic for various IXCs).

information to interconnected carriers, and would also prohibit incumbent LECs from claiming a proprietary right to signaling protocols.[906]

c. Discussion

(1) Local Switching Capability

410. We conclude that incumbent LECs must provide local switching as an unbundled network element. The record supports a finding that it is technically feasible for incumbent LECs to provide access to an unbundled local switching element, and that denying access to a local switching element would substantially impair the ability of many competing carriers to provide switched telecommunications services. We also note that section 271 requires BOCs to offer or provide "[l]ocal switching unbundled from transport, local loop transmission, or other services" as a precondition to providing in-region interLATA services.[907] As discussed below, we identify a local switching element that includes the basic function of connecting lines and trunks as well as vertical switching features, such as custom calling and CLASS features.[908] We agree with the Illinois Commission that defining the switching element in this way will permit competitors to compete more effectively by designing new packages and pricing plans.[909]

411. In the United States, there are over 23,000 central office switches, the vast majority of which are operated by incumbent LECs.[910] It is unlikely that consumers would receive the benefits of competition quickly if new entrants were required to replicate even a small percentage of incumbent LECs' existing switches prior to entering the market. The Illinois Commission staff presented evidence in a recent proceeding indicating that it takes

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[906] Wyoming Commission comments at 24.

[907] 47 U.S.C. § 271(c)(2)(B)(vi).

[908] Custom calling features, such as call waiting, three-way calling, and call forwarding, are switch-based calling functions. CLASS features, such as caller ID, are number translation services that are based on the availability of interoffice signaling.

[909] *AT&T Communications of Illinois, Petition for a Total Local Exchange Wholesale Service Tariff from Illinois Bell Telephone Company Pursuant to Section 13-505.5 of the Illinois Public Utilities Act*, Order, Docket Nos. 95-0458 and 95-0531, June 26, 1996 (Illinois Wholesale Order) at 63-66.

[910] *Statistics of Communications Common Carriers*, Federal Communications Commission, 1994/1995 Edition, at Table 2.4. This figure is derived from carriers filing with the FCC, which represent approximately 92 percent of the industry.

between nine months and two years for a carrier to purchase and install a switch.[911] We find this to be persuasive evidence of the entry barrier that would be created if new entrants were unable to obtain unbundled local switching from the incumbent LEC. The ability to purchase unbundled switching will also promote competition in an area until the new entrant has built up a sufficient customer base to justify investing in its own switch. We expect that the availability of unbundled local switching is likely to increase the number of carriers that will successfully enter the market, and thus should accelerate the development of local competition.

412. We define the local switching element to encompass line-side and trunk-side facilities plus the features, functions, and capabilities of the switch.[912] The line-side facilities include the connection between a loop termination at, for example, a main distribution frame (MDF), and a switch line card.[913] Trunk-side facilities include the connection between, for example, trunk termination at a trunk-side cross-connect panel and a trunk card. The "features, functions, and capabilities" of the local switch include the basic switching function of connecting lines to lines, lines to trunks, trunks to lines, trunks to trunks. It also includes the same basic capabilities that are available to the incumbent LEC's customers, such as a telephone number, directory listing, dial tone, signaling, and access to 911, operator services, and directory assistance.[914] In addition, the local switching element includes all vertical features that the switch is capable of providing, including custom calling, CLASS features, and Centrex, as well as any technically feasible customized routing functions. Thus, when a requesting carrier purchases the unbundled local switching element, it obtains all switching features in a single element on a per-line basis. A requesting carrier will deploy individual vertical features on its customers' lines by designating, via an electronic ordering interface, which features the incumbent LEC is to activate for particular customer lines.

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[911] Supplemental Rebuttal Testimony of Jake Jennings, Office of Policy and Planning, Illinois Commerce Commission, ICC Staff Ex. 1.04, Docket No. 95-0458, at 11-12 (Mar. 11, 1996).

[912] The NPRM used the terms "switch platform" and "port," as they had been developed by the Illinois and New York Commissions, respectively, to describe two possible approaches to establishing an unbundled local switching element. Parties commenting on the unbundled switching element attributed a variety of functionalities to each of these terms. To avoid confusion, we will not use these terms in discussing the unbundled local switching element. Instead, we will address commenters' proposals according to the functionality that they recommend be included in the definition of an unbundled local switching element.

[913] A line card is a plug-in electronic printed circuit card that operates ringing, holding, and other features associated with one or several telephone lines.

[914] Purchasing the local switching element does not entitle a requesting carrier to connect its own AIN call processing database to the incumbent LEC's switch, either directly or via the incumbent LEC's signal transfer point or database. Section V.I.4. which discusses the unbundling of incumbent LECs' signaling systems and databases. We also note that E911 and operator services are further unbundled from local switching. *See infra* Section V.I.6.

413. We disagree with commenters who argue that vertical switching features should be classified exclusively as retail services, available to competing providers only through the resale provision of section 251(c)(4).[915] The 1996 Act defines network element as "a facility or equipment used in the provision of a telecommunications service" and "the features, functions, and capabilities that are provided by means of such facility or equipment."[916] Vertical switching features, such as call waiting, are provided through operation of hardware and software comprising the "facility" that is the switch, and thus are "features" and "functions" of the switch.[917] We note that the Illinois Commission recently defined an unbundled local switching element to include vertical switching features.[918] Although we find that vertical switching features should be available to competitors through the resale provision of section 251(c)(4), we reject the view that Congress intended for section 251(c)(4) implicitly to remove vertical switching features from the definition of "network element."[919] Therefore, we find that vertical switching features are part of the unbundled local switching element.[920]

414. At this time we decline to require further unbundling of the local switch into a basic switching element and independent vertical feature elements. Such unbundling does not appear to be necessary to promote local competition. Indeed, most potential local competitors do not recommend that vertical switching features be available as separate network elements. MCI, AT&T and LDDS believe that such features should be available to new entrants as part of the local switching element.[921] We also note that additional unbundling of the local switch would not result in a practical difference in the way the local switching element is provisioned. As discussed below, when a competing provider orders the unbundled basic switching element for a particular customer line, it will designate which vertical features

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[915] Section 251(c)(4)(A) requires incumbent LECs "to offer for resale at wholesale rates any telecommunications service that the carrier provides at retail to subscribers who are not telecommunications carriers." 47 U.S.C. § 251(c)(4)(A).

[916] 47 U.S.C. § 153(29).

[917] In some cases vertical features may be provided using hardware and software external to the actual switch. In those instances, the functionality of such external hardware and software is a separate element under section 251(c)(3), and is available to competing providers. *See infra* Section V.I.4, discussing unbundled signaling and databases.

[918] *Illinois Wholesale Order* at 63-66.

[919] *See supra* Section V.H, rejecting arguments that services available for resale under section 251(c)(4) cannot be provided via unbundled elements.

[920] *See infra* Section VII.C.2.b.2, concerning the pricing of an unbundled switching element.

[921] AT&T June 28 *Ex Parte* at 1-2; MCI comments at 31; LDDS comments at 44.

should be activated by the incumbent LEC for that line. In addition, the record indicates that the incremental costs associated with vertical switching features on a per-line basis may be quite small,[922] and may not justify the administrative difficulty for the incumbent LEC or the arbitrator to determine a price for each vertical element. Thus, states can investigate, in arbitration or other proceedings, whether vertical switching features should be made available as separate network elements. We will continue to review and revise our rules in this area as necessary.

415. We conclude that providing access to an unbundled local switching element at a LEC central office is technically feasible. We are not persuaded by the argument that shared use of an unbundled switching element would jeopardize network security and reliability by permitting competitors independently to activate and deactivate various switching features. A competing provider will purchase and obtain the local switching element the same way it obtains an unbundled local loop, that is, by ordering, via electronic interfaces,[923] the local switching element and particular vertical switching features.[924] The incumbent LEC will receive the order and activate (or deactivate) the particular features on the customer line designated by the competing provider. Consequently, the incumbent LEC is not required to relinquish control over operations of the switch.

416. We also reject the argument that a definition of local switching that incorporates shared use of a local switch would involve physical partitioning of the switch.[925] The requirements we establish for local switch unbundling do not entail physical division of the switch, and consequently do not impose the inefficiency or technical difficulties identified by some commenters.

417. Nor are we persuaded by the arguments of some incumbent LECs that an unbundled switching element based on shared use of the local switch is technically infeasible because incumbent LECs lack significant excess capacity at any given time. Initially, many requests for local switching elements from competitors will likely result from the loss of customers by the incumbent LEC. Thus, at least initially, an increase in the use of a local switch by the requesting carrier is not likely to lead to an enormous, immediate increase in switch use overall. If incumbent LECs and competing providers believe that they would

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[922] LDDS comments at 57, Letter from Bruce Cox, Government Affairs Director, AT&T, to Elliot Maxwell, FCC, June 25, 1996 (AT&T June 25 *Ex Parte*).

[923] *See infra* Section V.I.4, *infra*, addressing requesting carriers' access to incumbent LECs' ordering and provisioning systems.

[924] Section V.I.5 addresses the arrangements for ordering unbundled network elements.

[925] U S West comments at 55-57.

benefit by quantifying their anticipated demand for switch resources, they are free to do so in the negotiation and arbitration processes. Such planning may be necessary when a competitor anticipates that usage of the local switching element by its customers will place demands on the incumbent LEC's switch that exceed the usage levels anticipated by the incumbent LEC.[926]

418. We conclude that customized routing, which permits requesting carriers to designate the particular outgoing trunks that will carry certain classes of traffic originating from the competing provider's customers, is technically feasible in many LEC switches. Customized routing will enable a competitor to direct particular classes of calls to particular outgoing trunks, which will permit a new entrant to self-provide, or select among other providers of, interoffice facilities, operator services, and directory assistance.[927] Bell Atlantic notes that customized routing is generally technically feasible for local calling, although it notes that the technology and capacity constraints vary from switch to switch.[928] SBC contends that customized routing is technically infeasible for older switches, such as the 1AESS switch.[929] AT&T acknowledges that, although the ability to establish customized routing in 1AESS switches may be affected by the "call load" in each office, only 9.8% of the switches used by the seven RBOCs, GTE and SNET are 1AESS switches.[930] We recognize that the ability of an incumbent LEC to provide customized routing to a requesting carrier will depend on the capability of the particular switch in question. Thus, our requirement that incumbent LECs provide customized routing as part of the "functionality" of the local switching element applies, by definition, only to those switches that are capable of performing customized routing. An incumbent LEC must prove to the state commission that customized routing in a particular switch is not technically feasible.

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[926] Bell Atlantic, for example, notes that a competitor's service or pricing packages could stimulate greater switch usage than previously experienced by the incumbent. Letter from Patricia Koch, Assistant Vice President, Bell Atlantic, to William Caton, Acting Secretary, FCC, June 21, 1996 (Bell Atlantic June 21 *Ex Parte*).

[927] *See, e.g.*, AT&T June 28 *Ex Parte*. In addition, we note that the Illinois Commission recently directed Ameritech and Centel to permit a carrier purchasing wholesale local exchange service to designate a provider of operator services and directory assistance other than that of the incumbent LEC. Such access is accomplished through the routing of such calls from the incumbent LEC's switch to the competing provider of the operator service or directory assistance. *See Illinois Wholesale Order* at 45.

[928] Letter from Patricia Koch, Assistant Vice President, Bell Atlantic, to William Caton, Acting Secretary, FCC, June 24, 1996 (Bell Atlantic June 24 *Ex Parte*); *see also* BellSouth comments at 41-42 n.89 (the ability to provide customized routing depends on the quantity of customized routing requests from other competitors).

[929] SBC comments at 41-42.

[930] Letter from Bruce Cox, Government Affairs Director, AT&T, to William F. Caton, Secretary, FCC, July 11, 1996 (AT&T July 11 *Ex Parte*).

419. Section 251(d)(2)(A) requires the Commission, in determining which network elements should be made available to competing providers, to consider "whether access to such network elements as are proprietary in nature is necessary."[931] To withhold a proposed network element from a competing provider, an incumbent LEC must demonstrate that the element is proprietary and that gaining access to that element is not necessary because the competing provider can use other, nonproprietary elements in the incumbent LEC's network to provide service.[932] U S West asserts that switch unbundling could raise concerns involving, among other things, "licensing of intellectual property." It cites a request by one interconnector to be the exclusive provider of particular features in U S West's generic switching software.[933] Bell Atlantic states that it is not at liberty to sub-license the software that operates vertical switching features.[934] We note, however, that these incumbent LECs do not object to providing vertical switching functionalities to requesting carriers under the resale provision of section 251(c)(4).[935] In addition, the vast majority of parties that discuss unbundled local switching do not raise proprietary concerns with the unbundling of either basic local switching or vertical switching features. Even if we accept the claim of U S West and Bell Atlantic that vertical features are proprietary in nature, these carriers do not meet the second consideration in our section 251(d)(2)(A) standard, which requires an incumbent LEC to show that a new entrant could offer the proposed telecommunications service through the use of other, nonproprietary elements in the incumbent LEC's network.[936] Accordingly, we find that access to unbundled local switching is clearly "necessary" under our interpretation of section 251(d)(2)(A).[937]

420. Section 251(d)(2)(B) directs the Commission to consider whether the failure to provide access to an unbundled element "would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[938] We have interpreted

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[931] 47 U.S.C. § 251(d)(2)(A).

[932] *See supra* Section V.E.

[933] U S West comments at 55 n.117.

[934] Bell Atlantic comments, Albers Attachment at 17-18.

[935] U S West reply at 26-27; Bell Atlantic comments at 26.

[936] *See supra* Section V.E.

[937] *Id.*

[938] 47 U.S.C. § 251(d)(2)(B).

the term "impair" to mean either increased cost or decreased service quality that would result from using network elements of the incumbent LEC other than the one sought.[939] SBC and MFS contend that access to unbundled local switching may not be essential for new entrants because competitors are likely to deploy their own switches.[940] These parties present no evidence that competitors could provide service using another element in the LEC's network at the same cost and at the same level of quality. In addition, most commenters that address this issue generally argue that local switching is essential for the provision of competing local service,[941] and we agree. We thus conclude that a requesting carrier's ability to offer local exchange services would be impaired, if not thwarted, without access to an unbundled local switching element.

421. Section 251(c)(3) requires that incumbent LECs provide access to unbundled network elements on terms and conditions that are "just, reasonable, and nondiscriminatory."[942] We agree with CompTel and LDDS that new entrants will be disadvantaged if customer switchover is not rapid and transparent. We also note that the Michigan Commission has recognized the significance of customer switchover intervals and has directed Ameritech and GTE to file proposals on how they will "ensure the equal availability of expeditious processing of local, interLATA, and intraLATA carrier changes."[943] Therefore, we require incumbent LECs to switch over customers for local service in the same interval as LECs currently switch end users between interexchange carriers. This requirement applies to switchovers that only require the incumbent LEC to make changes to software. Switchovers that require the incumbent LEC to make physical modifications to its network, such as connecting a competitor's loop to its switch, are not subject to this requirement, and instead are governed by our terms and conditions for all unbundled elements.[944] Today, incumbent LECs routinely change customers' presubscribed interexchange carriers quickly and transparently, thereby contributing to the competitiveness of the interexchange market. We

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[939] *See supra* Section V.E.

[940] SBC reply at 23; MFS comments at 46.

[941] *See, e.g.*, LDDS reply at 18 (unbundled local switching is "critical" to local competition); TIA comments at 18; AT&T Mar. 21 Letter at 17-18.

[942] 47 U.S.C. § 251(c)(3).

[943] *In the Matter, On the Commission's Own Motion, To Establish Permanent Interconnection Arrangements Between Basic Local Exchange Service Providers*, Opinion and Order, Mich. Pub. Serv. Comm'n, Case No. U-10860, at 36-37 (June 5, 1996).

[944] *See supra* Section V.G., discussing provisioning intervals for unbundled network elements.

expect that a similar requirement for local exchange switchovers that require only a software change will similarly contribute to local exchange competition.

422. We reject the proposal by some incumbent LECs to define unbundled local switching as the facilities that provide a *point of access* to the switch, but that would not actually include switching functionality. Under this definition, the purchaser of the local switching element would not actually obtain local switching, only the right to purchase local switching functionality and other switching features at wholesale rates. We believe that the unbundled local switching element must include the functionality of connecting lines and trunks. The definition proposed by these incumbent LECs would contravene the requirement in section 251(c)(3) that incumbent LECs provide network elements "in a manner that allows requesting carriers to combine such elements in order to provide such telecommunications service."[945] If a competing provider combined its own loops and transport with the local switching element ("point of access"), it would be unable to provide telecommunications service without separately purchasing, at wholesale rates, switching functionality from the incumbent LEC.

423. We also disagree with the proposal to define local switching as a point of access plus basic switching functionality, but that would exclude vertical switching features.[946] As a legal matter, this definition is inconsistent with the 1996 Act's definition of "network element," which includes all the "features, functionalities, and capabilities provided by means of such facility or equipment."[947] In addition, this definition would not fulfill the pro-competitive objectives of the 1996 Act as effectively as the per-line definition we adopt. A competitor that obtains basic and vertical switching features at cost-based rates will have maximum flexibility to distinguish its offerings from those of the incumbent LEC by developing a variety of service packages and pricing plans.[948] Moreover, an upfront purchase of all local switching features may speed entry by simplifying practical issues such as the pricing of individual switching features.

424. We also address the impact on small incumbent LECs. For example, the Illinois Independent Telephone Association and the Rural Telephone Coalition favor rules that

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[945] 47 U.S.C. § 251(c)(3).

[946] Sprint comments at 34; USTA reply at 16-17; SBC reply at 20; NYNEX reply at 31; MECA comments at 29.

[947] 47 U.S.C. § 153(29); *see supra* section V.C., which interprets the Act's definition of "network element."

[948] *See, e.g.*, LDDS comments at 33; AT&T comments at 21.

recognize the differences between larger and smaller LECs.[949] We have considered the economic impact of our rules in this section on small incumbent LECs. In this section, for example, we expressly provide for the fact that certain LECs may possess switches that are incapable of performing customized routing for competitors that purchase unbundled local switching. As noted by Rural Telephone Coalition and the Illinois Independent Telephone Coalition, this approach is necessary to accommodate the different technical capabilities of large and small carriers. We also note that section 251(f) of the 1996 Act provides relief for certain small LECs from our regulations under section 251.

(2) Tandem Switching Capability

425. We also affirm our tentative conclusion in the NPRM that it is technically feasible for incumbent LECs to provide access to their tandem switches unbundled from interoffice transmission facilities. We note that some states already have required incumbent LECs to unbundle tandem switching.[950] Parties do not contend, pursuant to section 251(d)(2)(A), that tandem switches are proprietary in nature. With regard to section 251(d)(2)(B), we find that competitors' ability to provide telecommunications service would be impaired without unbundled access to tandem switching. Therefore, we find that the availability of unbundled tandem switching will ensure that competitors can deploy their own interoffice facilities and connect them to incumbent LECs' tandem switches where it is efficient to do so.

426. We define the tandem switch element as including the facilities connecting the trunk distribution frames to the switch, and all the functions of the switch itself, including those facilities that establish a temporary transmission path between two other switches. The definition of the tandem switching element also includes the functions that are centralized in tandems rather than in separate end office switches, such as call recording, the routing of calls to operator services, and signaling conversion functions.

(3) Packet Switching Capability

427. At this time, we decline to find, as requested by AT&T and MCI, that incumbent LECs' packet switches should be identified as network elements. Because so few parties commented on the packet switches in connection with section 251(c)(3), the record is insufficient for us to decide whether packet switches should be defined as a separate network element. We will continue to review and revise our rules, but at present, we do not adopt a national rule for the unbundling of packet switches.

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[949] Illinois Ind. Tel. Ass'n comments at 1; Rural Tel. Coalition reply at 37.

[950] *See, e.g.*, Ameritech comments at 43, Cincinnati Bell comments at 18, GTE comments at 38, AT&T March 21 Letter at 23.

3. Interoffice Transmission Facilities

a. Background

428. In the NPRM, we proposed to require incumbent LECs to make available unbundled transport facilities in a manner that corresponds to the rate structure for interstate transport charges. We specifically proposed to require unbundled access to links between the end office and the serving wire center (SWC), the SWC and the IXC point of presence (POP), the end office and the tandem switch, and the tandem switch and the SWC. We also tentatively concluded that incumbent LECs should be required to unbundle channel termination facilities for special access from the interoffice facilities. In addition, we requested comment on whether and how other interoffice facilities used by incumbent LECs should be unbundled.

b. Comments

429. The vast majority of the parties that discussed local transport unbundling supported the Commission's proposal to provide access to dedicated and shared interoffice facilities as unbundled network elements.[951] BellSouth, for example, asserts that individual transport components should be available as unbundled elements, and notes that some LECs already have unbundled transport from its other access services.[952]

430. Several incumbent LECs contend that they already provide unbundled transport services pursuant to the Commission's *Expanded Interconnection* rules.[953] PacTel asserts that its proposal to tariff unbundled transport elements, including dedicated transport and tandem-switched transport, will fulfill its duties under sections 251 and 271.[954] Bell Atlantic and TIA, on the other hand, indicate that existing tariffs for unbundled transport facilities are

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[951] AT&T comments at 22; USTA comments at 35; Frontier comments at 16; GCI comments at 12; Sprint comments at 39; GST comments at 24; NYNEX comments at 63; NEXTLINK comments at 23; ACSI comments at 41; MCI comments at 17; ALTS comments at 30; Citizens Utilities comments at 15; CompTel comments at 45; TIA comments at 13; Bell Atlantic comments at 22; U S West comments at 48; Teleport comments at 37; MFS comments at 48; USTA comments at 35; TCC comments at 35; New York Commission comments at 27; Ameritech comments at 43; BellSouth comments at 42.

[952] BellSouth comments at 42-43.

[953] Ameritech comments at 42-43; Cincinnati Bell comments at 18; GTE comments at 38.

[954] PacTel comments at 57.

insufficient to comply with the 1996 Act.[955] MFS asks the Commission to clarify that, under the expanded interconnection rules as well as the 1996 Act, incumbent LECs must unbundle all interoffice transport facilities without requiring the requesting carrier to purchase channel terminations or other elements.[956]

431. Parties agree that local transport unbundling is technically feasible.[957] MCI, for example, asserts that transport facilities are already unbundled for exchange access and thus there is no question that unbundling is technically feasible.[958] NCTA, GST, TIA, and MFS contend that unbundling transport elements should be presumed technically feasible because of the Commission's *Expanded Interconnection* proceeding.[959] AT&T and Telecommunications Resellers Association point out that IXCs currently obtain interconnections between transport elements and the tandem switches pursuant to standard specifications.[960]

432. A number of commenters specify particular components of local transport that should be unbundled: (1) dedicated transport trunks from incumbent LEC end offices to competitors' switches, to IXC POPs, and to other end offices of the incumbent LEC; and (2) common transport trunks between incumbent LEC end offices and tandem switches.[961] In addition, ALTS, MFS, AT&T, and MCI contend that requesting carriers should have the ability to order such transport trunks with or without electronics (*i.e.*, as "dark fiber").[962] GTE disagrees and argues that the definition of network element only encompasses facilities "*used*

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[955] Bell Atlantic comments at 27 (Bell Atlantic has already filed, or plans to file, intrastate tariffs for the network elements it has unbundled under expanded interconnection.); TIA comments at 13.

[956] MFS comments at 48; *accord* AT&T comments at 22; MCI comments at 17.

[957] *See, e.g.*, GST comments at 24; AT&T comments at 22; GTE reply at 18-19; GVNW comments at 28; NYNEX comments at 65; MCI comments at 32; Comcast comments at 18; CompTel comments at 31; NCTA comments at 42; MFS comments at 48; Telecommunications Resellers Ass'n comments at 35; Ameritech comments at 43.

[958] MCI comments at 32.

[959] NCTA comments at 42; GST comments at 24; TIA comments at 13; MFS comments at 47-48.

[960] AT&T comments at 22; Telecommunications Resellers Ass'n comments at 35.

[961] *See, e.g.*, AT&T comments at 22; NYNEX comments at 62-63; GVNW comments at 20; TCC reply at 18; ACSI comments, Attachment 1 at 5-6.

[962] ALTS comments at 30; MCI comments at 32; AT&T comments at 22; MFS comments at 48.

in the provision of telecommunications service," and that dark fiber does not meet this definition because LECs do not "use" it in their networks.[963]

433. Several parties ask that the Commission specify additional transport components as unbundled network elements beyond those proposed in the NPRM. AT&T contends that incumbent LECs should have to unbundle their digital cross-connect systems (DCSs), which are now used to disaggregate high-speed traffic from IXCs into individual circuits.[964] MCI and AT&T contend that these facilities will enable IXCs to use more cost-efficient, high-speed facilities to route traffic to the incumbent LEC and have the traffic disaggregated into individual circuits at the DCS.[965] CompTel asserts that, when direct-trunked transport transits a tandem switch or other intermediate node, incumbent LECs should offer each individual link as an unbundled element.[966] MCI also asserts that competitors need "loop transport" to carry traffic from the incumbent's unbundled loops to the competitor's switch.[967]

434. A number of parties assert that the availability of unbundled transport facilities would promote local competition. AT&T contends that it seeks to combine unbundled common transport with competitive tandem switching and dedicated transport to provide IXCs with alternative access service from the competitor's end office to the IXC POP.[968] AT&T, Telecommunications Resellers Association, and TIA assert that the availability of unbundled dedicated transport will allow competitors to connect their switches to incumbent LEC switches efficiently.[969] MCI contends that incumbent LECs have denied MCI access to trunks between the incumbent LECs' end offices, thereby increasing MCI's costs of deploying local facilities and restricting MCI's ability to acquire redundant facilities for its local traffic.[970] NYNEX and LDDS recommend that the Commission require incumbent LECs to offer unbundled dedicated transport between their own end office or tandem switches and the

[963] GTE reply at 21.

[964] AT&T comments at 22 n.23; *accord* SBC comments at 87.

[965] AT&T comments at 22; MCI comments at 17.

[966] CompTel comments at 45.

[967] MCI comments at 22.

[968] AT&T Mar. 21 Letter at 22.

[969] *Id.*; Telecommunications Resellers Ass'n comments at 35; TIA comments at 13.

[970] MCI comments at 46.

requesting carrier's switch or POP.[971] The Texas Public Utility Commission has specifically required incumbent LECs to provide competitors with "loop facilities transport service," which connects an unbundled loop to the competitor's switch.[972]

435. Several parties caution that pricing distortions could accompany a ruling that transport components are network elements under section 251(c)(3).[973] GTE, for example, argues that the Commission should not permit requesting carriers to use unbundled transport elements to avoid access charges.[974] Similarly, Ameritech states that the 1996 Act prohibits arbitrary price distinctions between switched and special transport, and that, if interoffice facilities are unbundled from tandem switching, no such distinction can be made.[975] Other parties maintain that the 1996 Act requires cost-based pricing of all unbundled elements, including transport elements.[976]

436. A few parties oppose a requirement that incumbent LECs unbundle facilities that correspond to interstate transport and special access rate elements.[977] Cincinnati Bell argues that these elements are already available through existing tariffs, and therefore should not be required to be offered as unbundled elements pursuant to the 1996 Act.[978] MECA argues that local transport and special access facilities are toll access facilities and therefore are not necessary to provide competitive basic local exchange service.[979] MECA also states that any requirement concerning local transport and special access should not apply to any LEC that was not covered by the MFJ restrictions and, in order to minimize arbitrage opportunities, any

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[971] NYNEX comments at 63 n.126; LDDS reply at 18.

[972] Texas Commission comments at 18.

[973] *See e.g.*, GTE comments at 38; CompTel comments at 45; Ameritech comments at 43.

[974] GTE comments at 38.

[975] Ameritech comments at 43.

[976] ACSI comments at 42; MCI comments at 32.

[977] *See, e.g.*, MECA comments at 38; Cincinnati Bell comments at 18.

[978] Cincinnati Bell comments at 18.

[979] MECA comments at 38.

modifications to local transport and special access must wait until the LECs have restructured their local rates.[980]

437. TCC urges the Commission to define dedicated transport as an interoffice transmission path dedicated to a single carrier, including multiplexing and grooming, redundant facilities, and cross-office wiring to a digital cross-connect panel.[981] ACSI argues that the Commission should require incumbent LECs to make both dedicated and switched transport available at the DS-0, DS-1, DS-3 and Optical Carrier levels, which should be offered as completely unbundled links between serving wire centers (SWCs) and interconnector points-of-presence, the central office and the SWC, the end office and the tandem, and the SWC and the tandem.[982] Teleport advocates that interoffice trunking facilities be defined in terms of their underlying transmission characteristics without reference to the use of the facility.[983]

438. ALTS argues that, since there are currently well-defined standards for transport, there should be no impediment to requiring equivalent levels of technical performance among competing carriers, *i.e.*, no meaningful distinctions among the technical performance of different DS1s.[984] Therefore, as in the case with local loops, ALTS contends that competitors should receive the same or better ordering, provisioning, and installation service as the incumbent provides itself and that penalties should be assessed if deadlines are not met.[985]

c. Discussion

439. We conclude that incumbent LECs must provide interoffice transmission facilities on an unbundled basis to requesting carriers. The record supports our conclusion that such access is technically feasible and would promote competition in the local exchange

[980] MECA comments at 38.

[981] TCC comments at 38; *see also* NYNEX comments at 63 for a similar definition.

[982] ACSI comments at 41.

[983] Teleport comments at 37.

[984] ALTS comments at 30.

[985] *Id.* at 30-31.

market. We note that the 1996 Act requires BOCs to unbundle transport facilities prior to entering the in-region, interLATA market.[986]

440. We require incumbent LECs to provide unbundled access to shared transmission facilities between end offices and the tandem switch.[987] Further, incumbent LECs must provide unbundled access to dedicated transmission facilities between LEC central offices or between such offices and those of competing carriers. This includes, at a minimum, interoffice facilities between end offices and serving wire centers (SWCs), SWCs and IXC POPs, tandem switches and SWCs, end offices or tandems of the incumbent LEC, and the wire centers of incumbent LECs and requesting carriers. The incumbent LEC must also provide, to the extent discussed below, all technically feasible transmission capabilities, such as DS1, DS3, and Optical Carrier levels (*e.g.* OC-3/12/48/96) that the competing provider could use to provide telecommunications services. We conclude that an incumbent LEC may not limit the facilities to which such interoffice facilities are connected, provided such interconnection is technically feasible, or the use of such facilities. In general, this means tha incumbent LECs must provide interoffice facilities between wire centers owned by incumben LECs or requesting carriers, or between switches owned by incumbent LECs or requesting carriers. For example, an interoffice facility could be used by a competitor to connect to the incumbent LEC's switch or to the competitor's collocated equipment. We agree with the Texas Commission that a competitor should have the ability to use interoffice transmission facilities to connect loops directly to its switch. We anticipate that these requirements will reduce entry barriers into the local exchange market by enabling new entrants to establish efficient local networks by combining their own interoffice facilities with those of the incumbent LEC.

441. The ability of new entrants to purchase the interoffice facilities we have identified will increase the speed with which competitors enter the market. By unbundling various dedicated and shared interoffice facilities, a new entrant can purchase all interoffice facilities on an unbundled basis as part of a competing local network, or it can combine its own interoffice facilities with those of the incumbent LEC. The opportunity to purchase unbundled interoffice facilities will decrease the cost of entry compared to the much higher cost that would be incurred by an entrant that had to construct all of its own facilities. An efficient new entrant might not be able to compete if it were required to build interoffice facilities where it would be more efficient to use the incumbent LEC's facilities. We recognize that there are alternative suppliers of interoffice facilities in certain areas. We are convinced, however, that entry will be facilitated if competitors have greater, not fewer, options for procuring interoffice facilities as part of their local networks, and that Congress

[986] 47 U.S.C. § 271(c)(2)(B)(v).

[987] Section V.I. addresses unbundled access to the tandem switching element.

intended for competitors to have these options available from competitors. Thus, the rules we establish for the unbundled interoffice facilities should maximize a competitor's flexibility to use new technologies in combination with existing LEC facilities.

442. We find that it is technically feasible for incumbent LECs to unbundle the foregoing interoffice facilities as individual network elements. The interconnection and unbundling arrangements among the larger LECs, IXCs, and CAPs that resulted from our *Expanded Interconnection* rules confirm the technical feasibility of unbundling interoffice facilities used by incumbent LECs to provide special access and switched transport.[988] As AT&T and Telecommunications Resellers Association point out, IXCs currently interconnect with incumbent LECs' transport facilities pursuant to standard specifications.[989] We also note that commenters do not identify technical feasibility problems with unbundling interoffice facilities.

443. We also find that it is technically feasible for incumbent LECs to unbundle certain interoffice facilities not addressed in our *Expanded Interconnection* proceeding. First, we conclude that an incumbent LEC must provide unbundled access to interoffice facilities between its end offices, and between any of its switching offices and a new entrant's switching office, where such interoffice facilities exist. This allows a new entrant to purchase unbundled facilities between two end offices of the incumbent LEC, or between the new entrant's switching office and the incumbent LEC's switching office. Although our *Expanded Interconnection* rules did not specifically require incumbent LECs to unbundle these facilities, commenters do not identify any potential technical problem with such unbundling. Moreover, some LECs already offer unbundled dedicated interoffice facilities, for example, between their end offices and SWCs for exchange access.

444. In addition, as a condition of offering unbundled interoffice facilities, we require incumbent LECs to provide requesting carriers with access to digital cross-connect system (DCS) functionality. A DCS aggregates and disaggregates high-speed traffic carried between IXCs' POPs and incumbent LECs' switching offices, thereby facilitating the use of cost-efficient, high-speed interoffice facilities. AT&T notes that the BOCs, GTE, and other large LECs currently make DCS capabilities available for the termination of interexchange traffic.[990] We find that the use of DCS functionality could facilitate competitors' deployment of high-speed interoffice facilities between their own networks and LECs' switching offices.

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[988] *See, e.g.*, MCI comments at 32; NCTA comments at 42; GST comments at 24; TIA comments at 13; MFS comments at 47-48.

[989] AT&T comments at 22; Telecommunications Resellers Ass'n comments at 35.

[990] Letter from Bruce Cox, Government Affairs Director, AT&T, to William F. Caton, Acting Secretary, FCC, July 18, 1996.

Therefore, we require incumbent LECs to offer DCS capabilities in the same manner that they offer such capabilities to IXCs that purchase transport services.

445. We disagree with PacTel's assertion that it is not technically feasible for incumbent LECs to provide DCS functionality to competitors that purchase unbundled interoffice facilities.[991] First, contrary to PacTel's assertion, we do not require incumbent LECs to develop new arrangements for the offering of DCS capabilities to competitors. We only require that DCS capabilities be made available to competitors to the extent incumbent LECs offer such capabilities to IXCs. Second, PacTel suggests the provision of DCS capabilities requires physical partitioning of the DCS equipment in order to prevent carriers from gaining control of each other's traffic.[992] We do not require such partitioning for the provision of DCS capabilities. As noted above, we only require incumbent LECs to permit competitors to use DCS functionality in the same manner that incumbent LECs now permit IXCs to use such functionality.

446. Section 251(d)(2)(A) requires the Commission to consider whether "access to such network elements as are proprietary in nature is necessary."[993] Commenters do not identify any proprietary concerns relating to the provision of interoffice facilities that LECs are required to unbundle. We also note that many of these facilities are also currently offered on an unbundled basis to competing carriers. Therefore, the record provides no basis for withholding these facilities from competitors based on proprietary considerations.

447. Section 251(d)(2)(B) requires the Commission to consider whether the failure to provide access to an unbundled element "would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[994] We have interpreted the term "impair" to mean either increased cost or decreased service quality that would result from using network elements other than the one sought.[995] Certain commenters contend that unbundled access to these facilities would improve their ability to provide competitive local

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[991] Letter from Alan Ciamporcero, Vice President, PacTel, to William F. Caton, Acting Secretary, FCC, July 17, 1996 (PacTel July 17 *Ex Parte*).

[992] *Id.*

[993] 47 U.S.C. § 251(d)(2)(A).

[994] 47 U.S.C. § 251(d)(2)(B).

[995] *See supra* Section V.E.

change and exchange access service.[996] MCI, for example, argues that its inability to obtain ibundled access to trunks between an incumbent LEC's end offices raises its cost of oviding local service.[997] Accordingly, we conclude that the section 251(d)(2)(B) requires cumbent LECs to provide access to shared interoffice facilities and dedicated interoffice cilities between the above-identified points in incumbent LECs' networks, including cilities between incumbent LECs' end offices, new entrant's switching offices and LEC itching offices, and DCSs. We believe that access to these interoffice facilities will iprove competitors' ability to design efficient network architecture, and in particular, to mbine their own switching functionality with the incumbent LEC's unbundled loops.[998]

448. We reject Cincinnati Bell's argument that existing tariffs for transport and ecial access services filed pursuant to our *Expanded Interconnection* rules fulfill our ligation to implement the requirements of section 251(c).[999] First, the *Expanded terconnection* rules require the unbundling of interstate transport services only by Class A rriers [1000] whereas section 251(c) requires network unbundling by all incumbent LECs, cept for carriers that are exempt under section 251(f) from our interconnection rules.[1001] nsequently, some non-Class A carriers that were not subject to our *Expanded terconnection* requirements will be required to comply with the requirements of this Order. cond, we find that the Class A carriers' existing tariffs for unbundled transport elements do t satisfy the unbundling requirement of section 251(c), as suggested by Cincinnati Bell, cause such tariffs are only for interstate access services, not for unbundled interoffice cilities. As such, existing federal tariffs for transport and special access exclude *intra*state nsport, and therefore are not equivalent to unbundled interoffice facilities, which we have termined to be nonjurisdicational in nature.

See, e.g., AT&T Mar. 21 Letter; LDDS Comments at 47.

MCI comments at 46.

See, e.g, MCI comments at 22.

Cincinnati Bell comments at 18.

Class A carriers are those exchange carriers having more than $100 million in total company regulated enues. *See 1990 Cost Support Order*, 5 FCC Rcd 1364, (Com. Car. Bur. 1990); *Commission Requirements Cost Support Material to be Filed with 1989 Annual Access Tariffs*, 4 FCC Rcd 1662, 1663 (Com. Car. Bur. 8).

See infra Section XII, addressing the exemption for rural LECs.

449. We also disagree with MECA, GTE, and Ameritech that we should consider "pricing distortions" in adopting rules for unbundled interoffice facilities.[1002] Section , below, addresses the pricing of unbundled network elements identified pursuant to section 251(c)(3) as it relates to our current access charge rules. Nor are we are persuaded by MECA's argument that incumbent LECs not subject to the MFJ should not be required to unbundle transport facilities because, according to MECA, such facilities are unnecessary for local competition.[1003] As discussed above, the ability of a new entrant to obtain unbundled access to incumbent LECs' interoffice facilities, including those facilities that carry interLATA traffic, is essential to that competitor's ability to provide competing telephone service.

450. We do not impose specific terms and conditions for the provision of unbundled interoffice facilities. We believe that the rules we establish in this Order for all unbundled network elements adequately address ALTS's concern regarding the provisioning, billing, and maintenance of unbundled transport facilities.[1004] We also decline at this time to address the unbundling of incumbent LECs' "dark fiber." Parties that address this issue do not provide us with information on whether dark fiber qualifies as a network element under sections 251(c)(3) and 251(d)(2). Therefore, we lack a sufficient record on which to decide this issue. We will continue to review and revise our rules in this area as necessary.

451. Rural Telephone Coalition contends that incumbent LECs should not be required to construct new facilities to accommodate new entrants.[1005] We have considered the economic impact of our rules in this section on small incumbent LECs. In this section, for example, we expressly limit the provision of unbundled interoffice facilities to *existing* incumbent LEC facilities. We also note that section 251(f) of the 1996 Act provides relief for certain small LECs from our regulations under section 251.

4. Databases and Signaling Systems

a. Background

(1) NPRM

[1002] MECA comments at 38, GTE comments at 38; Ameritech comments at 43.

[1003] MECA comments at 38.

[1004] Section V.G addresses terms and conditions governing incumbent LECs' provision of access to unbundled network elements.

[1005] Rural Tel. Coalition reply at 36.

452. In the NPRM, we tentatively concluded that incumbent LECs should be required to unbundle access to their signaling systems and databases as network elements.[1006] We asked commenters to identify points at which carriers interconnect with SS7 networks[1007] today, as well as the technical feasibility of establishing other points of access and interconnection.[1008] We also asked commenters to identify those signaling and database functions currently provided by incumbent LECs on an unbundled basis, and other functions not currently offered by incumbent LECs, that the parties believe should be offered on an unbundled basis.[1009]

453. In the NPRM, we noted the possibility that competitors that provide local exchange service using resold incumbent LEC services or unbundled elements might want to connect an alternative call processing database to the incumbent LEC's SS7 network in order to offer services and features not available through the incumbent LEC's own SS7 network databases.[1010]

454. We also sought comment on unbundling access to the Advanced Intelligent Network (AIN), and referenced our separate Intelligent Networks proceeding which deals with related issues.[1011] We sought comment on whether to unbundle access to AIN facilities and functionalities.

(2) SS7 Signaling Network Technology

455. Signaling systems facilitate the routing of telephone calls between switches. Most LECs employ signaling networks that are physically separate from their voice networks, and these "out-of-band" signaling networks simultaneously carry signaling messages for

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[1006] NPRM at para. 107.

[1007] A signaling network that is physically separate from the voice networks.

[1008] NPRM at para. 108.

[1009] NPRM at para. 108.

[1010] NPRM at para. 112.

[1011] NPRM at para. 113; *see In the Matter of Intelligent Networks*, CC Docket No. 91-346, Notice of Inquiry, 6 FCC Rcd 7256 (1991), Notice of Proposed Rulemaking, 8 FCC Rcd 6813 (1993) (*Intelligent Networks*). We incorporated the record of the *Intelligent Network* proceeding into this docket by reference. NPRM at para. 113 n.151.

multiple calls. In general, most LECs' signaling networks adhere to a Bellcore standard Signaling System 7 (SS7) protocol.[1012]

456. SS7 networks use signaling links to transmit routing messages between switches, and between switches and call-related databases. A typical SS7 network includes a signaling link, which transmits signaling information in packets, from a local switch to a signaling transfer point (STP), which is a high-capacity packet switch.[1013] The STP switches packets onto other links according to the address information contained in the packet.[1014] These additional links extend to other switches, databases, and STPs in the LEC's network.[1015] A switch routing a call to another switch will initiate a series of signaling messages via signaling links through an STP to establish a call path on the voice network between the switches.

457. As mentioned above, the SS7 network also employs signaling links (via STPs) between switches and call-related databases, such as the Line Information Database (LIDB), Toll Free Calling (*i.e.*, 800, 888 number) database, and AIN databases. These links enable a switch to send queries via the SS7 network to call-related databases, which return customer information or instructions for call routing to the switch.[1016]

458. From the perspective of a switch in a LEC network, the databases discussed above merely supply information or instructions. Updating or populating the information in such databases, however, takes place through a separate process involving different equipment. Carriers input information directly into a service management system (SMS), which in turn downloads such information into the individual databases.

459. The Advanced Intelligent Network (AIN) is a network architecture that uses distributed intelligence in centralized databases to control call processing and manage network

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[1012] The SS7 protocol is widely used and has been adopted by Bellcore, the American National Standards Institute, and the International Telecommunication Union--Telecommunication Standardization Sector. *See* Bellcore, BOC Notes on the LEC Networks (1994).

[1013] STPs are usually deployed in pairs for redundancy purposes. *Id.*

[1014] Any element capable of handling SS7 signaling messages is also generally referred to as a Signaling Point. Each Signaling Point has a unique network address and every SS7 signaling message has a routing label containing addresses for the origination and destination of the message plus a signaling link selection code. *Id.*

[1015] For example, an STP to STP connection is generally used for inter-network interconnection. An STP to switch connection is a common part of the SS7 network and is used to connect end offices to the SS7 network. A connection between a call-related database and a switch is usually done via a connection at an STP (*i.e.*, database to STP to switch). *Id.*

[1016] Switch software commonly referred to as a "trigger" interrupts call progress, in order for the switch to query call-related databases. *Id.*

information, rather than performing those functions at every switch. An AIN-capable switch[1017] halts call progress when a resident software "trigger" is activated, and uses the SS7 network to access intelligent databases, known as Service Control Points (SCPs), that contain service software and subscriber information, for instruction on how to route, monitor, or terminate the call.[1018] AIN is being used in the deployment of number portability, wireless roaming, and such advanced services as same number service (i.e., 500 number service) and voice recognition dialing. AIN services are designed and tested in an off-line computer known as a Service Creation Environment (SCE). Once a service is successfully tested, the software is transferred to an SMS that administers and supports SCP databases in the network. The SMS then regularly downloads software and information to an SCP where interaction with the voice network takes place via the signaling links and STPs discussed above.

b. Comments

460. Almost all parties, including incumbent LECs, support the Commission's tentative conclusion to require incumbent LECs to unbundle access to their signaling systems.[1019] Parties generally agree that access to SS7 network signaling is essential to the provision of competitive local exchange service and that providing such access is technically feasible.[1020] Indeed, most BOCs state that they already provide access to their signaling

[1017] A switch with AIN capabilities is referred to as a service switching point (SSP). *Id.*

[1018] Switch queries and database responses use a part of the SS7 protocol called the Transaction Capabilities Application Part (TCAP). *Id.*

[1019] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 24; ACSI comments at 42; ALTS comments at 31; AT&T comments at 23; Comcast comments at 20; Ericsson comments at 5; GCI comments at 12; GST comments at 24; Intermedia comments at 13; MFS comments at 48-49; MCI comments at 32; Sprint comments at 39; Teleport comments at 37; Time Warner comments at 44-45; Ameritech comments at 46-47; BellSouth comments at 43; NYNEX comments at 71; PacTel comments at 57-60; Alabama Commission comments at 18; District of Columbia Commission comments at 23; Florida Commission comments at 17; Mass. Commission comments at 7; New York Commission comments at 27; Wyoming Commission comments at 23. These parties also generally support access to databases associated with signaling. Some parties, however, urge the Commission to weigh the potential harm from access to database and signaling systems, which might give someone the opportunity to cause inadvertent or malicious damage to large parts of the public switched network. Secretary of Defense comments at 6-7; Sprint comments at 39-40; Lincoln Tel. reply at 15; GVNW comments at 20, 29 (screening necessary to prevent network failures from proliferating between interconnected networks).

[1020] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 24; ACSI comments at 42; ALTS comments at 31; AT&T comments at 23; Citizens Utilities comments at 15; CompTel comments at 43; Continental comments at 19; Ericsson comments at 5; Frontier comments at 16; GCI comments at 12; LCI comments at 18; MCI comments at 32; NEXTLINK comments at 23; Sprint comments at 39-40; TIA comments at 14; Ameritech comments at 47; Bell Atlantic comments at 27-28; GTE comments at 38-41; U S West comments at 57-58; California Commission comments at 26; Colorado Commission comments at 24; Louisiana Commission comments at 5; Wyoming Commission comments at 23-24; USTN reply at 4.

systems.[1021] BellSouth states that it currently provides such access at its STPs via signaling links to all carriers, including IXCs, independent telephone companies, wireless carriers, and other local exchange carriers.[1022] Commenters also report that independent SS7 network aggregators currently provide access to signaling systems to many independent local exchange and interexchange carriers, and to some competitive local carriers.[1023] In addition, several state commissions note that they already have, or are considering, a requirement that incumbent LECs unbundle access to their signaling systems, including associated databases.[1024]

461. Some incumbent LECs argue that, because there are competitive providers for SS7 network services, there is no need for the Commission to require incumbent LECs to unbundle these network elements for competing carriers.[1025] Most potential competitors counter that access to incumbent LEC SS7 networks will be necessary for some carriers, either because alternative providers of signaling systems and databases will not be available to them or because it will not be technically feasible to use any signaling network other than the incumbent LEC's SS7 network.[1026] AT&T argues that, even where there are alternative SS7

[1021] Ameritech comments at 46-47; Bell Atlantic comments at 27-30; BellSouth comments at 43; GTE comments at 40-41; NYNEX comments at 71; PacTel comments at 58-59; SBC comments at 46-48; Sprint comments at 39-41; USTA comments at 36.

[1022] BellSouth comments at 43.

[1023] AT&T comments at 23; BellSouth comments at 44-45; NYNEX comments at 71; GVNW comments at 29 (most small incumbent LECs obtain SS7 functionalities from US Intelco or a neighboring large incumbent LEC); GTE comments at 40-41 n.61 (competitors include Independent Telecommunications Network, Southern New England Telephone, and GTE Intelligent Network Services); NYNEX comments at 71; PacTel comments at 58; Bell Atlantic comments at Attachment 3, 16 (independent SS7 providers offer an out-of-band signaling channel which allows the service providers to interconnect with other SS7 networks); USTN reply at 1. Commenters note that these aggregators also provide access to databases associated with signaling.

[1024] *See, e.g.*, California Commission comments at 26 (under consideration by the California Commission); Colorado Commission comments at 24; Louisiana Commission comments at Attachment A; Michigan Commission comments at 12; Texas Commission comments at 19; Wyoming Commission comments at 23-24 (Wyoming Commission has draft rules only); In the Matter of the Commission Investigation Relative to the Establishment of Local Exchange Competition and Other Competitive Issues, Case No. 95-845-TP-COI at 49 (Ohio Commission June 12, 1996) (access to SS7 functionalities, and necessary customer databases such as 911, LIDB, Toll Free Calling, and Directory Assistance).

[1025] *See, e.g.*, Bell Atlantic comments at 27-28; BellSouth comments at 44-45; GTE comments at 40-41 (access is not necessary under section 251(d)(2)(A) to the extent it is proprietary and denial of such access would not impair the provision of competitive services under section 251(d)(2)(B) to the extent it is not proprietary); PacTel comments at 40, 57-60; NYNEX comments at 71 (there are already alternative suppliers of these functions, and as demand grows, more will enter the market).

[1026] *See* AT&T comments at 23; Letter from Frank Simone, Regulatory Division Manager, Federal Government Affairs, AT&T to William Caton, Acting Secretary, FCC, June 13, 1996 (AT&T June 13 *Ex Parte*).

networks, unbundling of the incumbent's SS7 network will increase competition and help control costs for new entrants.[1027]

462. Some incumbent LECs contend that the 1996 Act only requires them to unbundle access to their signaling systems and databases to the extent necessary to support call routing and completion for competitors.[1028] Other parties, including IXCs, disagree and contend that access to incumbent LECs' signaling systems under the 1996 Act should include access to all associated databases and use of deployed AIN technology, and that such access is necessary in order for them to compete successfully in the local exchange market.[1029]

463. Many parties argue that open access and interconnection to incumbent LECs' SS7 networks and signaling protocols are critical to maintaining the seamless routing and completion of traffic between competing carriers.[1030] Frontier asserts that the use of proprietary or closed protocols by incumbent LECs effectively can prevent interconnected networks from communicating with each other.[1031] Several state commissions have proposed or required that incumbent LECs provide unaltered transmission of signaling information between interconnecting carriers and their customers.[1032] In support of such access, several commenters cite recent interconnection agreements that provide for the exchange of SS7 signaling messages.[1033]

[1027] AT&T comments at 23; *accord* Telecommunications Resellers Ass'n comments at 36.

[1028] ALLTEL comments at 10; Ameritech comments at 46-47; Bell Atlantic comments at 22.

[1029] *See, e.g.*, AT&T comments at 23; MCI reply at 30-31.

[1030] ACSI comments at 45 (open access is important to support CLASS features and access to databases); Frontier comments at 16; GST comments at 24; MCI comments at 33; New York Commission comments at 27 (signaling systems may represent a bottleneck to efficient exchange of traffic for all LECs); Texas Commission comments at 20; Wyoming Commission comments at 24; USTN reply comments at 2.

[1031] Frontier comments at 16 n.31 (such anti-competitive behavior would be contrary to the pro-competitive goals of the 1996 Act); *accord* Wyoming Commission comments at 24 (incumbent LECs may not claim a proprietary right to signaling protocols).

[1032] Wyoming Commission comments at 23-24 (Wyoming Commission draft rules require unaltered transmission of signaling information); Texas Commission comments at 19 (Texas law requires interconnecting carriers to provide nondiscriminatory access to ensure the interoperability of networks and service to end users).

[1033] Georgia Commission comments at Attachment E 6-7 (BellSouth and MCIMetro interconnection agreement provides for the exchange of SS7 signaling messages including the Transaction Capabilities Application Part (TCAP) part of the SS7 protocol that supports *inter alia* CLASS features).

464. Virtually all parties agree that physical access, or interconnection. to the incumbent LEC's SS7 network should occur at the STP, because it provides essential network management and security functions that are not performed by other SS7 network elements.[1034] Commenters assert that such access at the STP would provide other carriers with access to all of the functions of an incumbent LEC's SS7 network.[1035] A few parties urge the Commission to require incumbent LECs to unbundle direct access to SCP databases.[1036] Most commenters, including all of the incumbent LECs, assert that such access is not technically feasible because SCP databases do not perform the mediation functions present at the STP.[1037] Some incumbent LECs argue that direct access to any SS7 network elements, other than the STP, would require development of additional industry standards before such access could be considered technically feasible.[1038]

465. Several parties advocate access to unbundled signaling links and STPs.[1039] BellSouth, however, argues that incumbent LECs should only have to provide access to their SS7 network at an STP for competitors.[1040] Parties describe several methods for competing

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[1034] *See, e.g.*, Ameritech comments at 48-50; Bell Atlantic comments at 27; MCI comments at 34-35; NYNEX comments at 71; Sprint comments at 40. Part of the STP security function is to screen incoming signaling traffic for unusable messages and to prevent them from reaching the SCP or switch where they could potentially cause reliability and performance problems. GVNW comments at 29; SBC comments at 46; USTA comments at 36. The STP also prevents unauthorized access to proprietary information. GTE comments at 39-40.

[1035] Bell Atlantic comments at 27; GTE comments at 39; USTA comments at 36. *See* AT&T comments at 24 n.25.

[1036] Frontier comments at 16; LCI comments at 18.

[1037] *See e.g.*, ACSI at 45; Bell Atlantic comments at 27-28; Colorado Commission comments at 24 (Colorado Commission requires unbundled access to the SCP via the STP); Comcast comments at 18; GTE comments at 40 (until appropriate mediation techniques and associated software and hardware are developed, access to SCP databases should remain through the STP); PacTel comments at 59; NYNEX comments at 71; SBC comments at 47; Ameritech reply at 20-21 (industry has yet to develop standards for SCP access); AT&T reply at 19-20 n.32; PacTel reply at 21-22.

[1038] GTE comments at 40; SBC comments at 47; Sprint comments at 40.

[1039] ALTS comments at Attachment A, 23; AT&T comments at 23; Cable & Wireless comments at 19, 24-25; Citizens Utilities comments at 15; GCI comments at 12; Frontier comments at 16; Telecommunications Resellers Ass'n comments at 35; NYNEX comments at 71 (provides unbundled access to network signaling resources for call set up and for database queries through unbundled signaling links and ports at its STPs); PacTel reply at 21-22; TIA comments at 14; California Commission comments at 26 (California Commission is considering *inter alia*, unbundling STPs and signaling links); Colorado Commission comments at 26; Wyoming Commission comments at 23-24 (Wyoming Commission draft rules require unbundling of signaling links, STPs, and SCPs); Iowa Commission comments at Appendix B, 4 (arguing that signaling links and STPs must be unbundled by incumbent LECs).

[1040] BellSouth reply at 23.

carriers to access unbundled elements of the incumbent LEC's SS7 network. A new entrant could provide or purchase signaling links to connect its switch to the incumbent LEC's STP, or it could provide its own signaling link and STP and then connect its STP to the incumbent LEC's STP.[1041] SBC adds that a competing carrier could also contract with a third party that has already established signaling link connectivity to the incumbent LEC's STPs.[1042] SBC also notes that it requires certification of new companies before implementing SS7 interconnection in order to protect the integrity of its network.[1043]

466. Commenters disagree over what databases qualify as network elements under the 1996 Act. Some parties, including IXCs and other potential local competitors, argue that access to all incumbent LEC databases should be unbundled as network elements.[1044] This would include both incumbent LEC call processing and non-call processing databases.[1045] Most incumbent LECs counter that administrative or "back office" databases do not fall within the definition of network element in the 1996 Act.[1046] Incumbent LECs supporting this limited definition also argue that only those databases used for the routing and completion of calls are required to be unbundled by the 1996 Act.[1047]

[1041] SBC comments at 47; Sprint comments at 40 (currently provides access to its SS7 network through "A" signaling links which run from the end office to the STP and through "B" signaling links which connect the STPs of two separate SS7 networks); U S West comments at 48 (competitors should be able to provide their own transport to an STP or purchase transport from the incumbent LEC); PacTel comments at 58 (Pacific Bell proposed, before the California Commission, to unbundle its signaling links that provide interconnection between other carriers' switches or STPs to Pacific Bell's STPs).

[1042] SBC comments at 47.

[1043] SBC comments at 47.

[1044] ACSI comments at 42-44; AT&T comments at 23-26; ALTS comments at 31; MCI comments at 32-33.

[1045] ACSI comments at 42-44; ALTS comments at 31; MCI comments at 32-33 (both call processing and non-call processing databases necessary to route, complete and bill simple and complex calls should be unbundled as network elements).

[1046] Ameritech comments at 48-51; Bell Atlantic reply at 12-23; GTE reply at 21; Lincoln Tel. reply at 12; NYNEX reply at 34.

[1047] Bell Atlantic reply at 12-23; GTE reply at 21; Lincoln Tel. reply at 12; NYNEX reply at 34.

467. A number of parties urge the Commission to require incumbent LECs to provide competing carriers with the same access to their databases that they provide to themselves.[1048] Some potential local competitors argue that access to a number of existing incumbent LEC databases is important if they are to compete effectively with the incumbent LEC.[1049] Many parties, including most incumbent LECs, identify access to the Line Information Database (LIDB)[1050] and the Toll Free Calling (*i.e.*, 800, 888 numbers) database[1051] as important to the provision of local service.[1052] Some potential local competitors contend that databases are a significant expense and that they will be prohibitively costly to duplicate immediately or in the near future.[1053] The Louisiana Commission notes that it currently requires incumbent LECs to provide competitive providers with access to LIDB, Toll Free Calling, and AIN databases through signaling interconnection such that the functionality, quality, terms and conditions are equal to those the incumbent LEC provides to itself.[1054] Several incumbent LECs respond that they already provide such access to the LIDB and Toll Free Calling

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[1048] ALTS comments at 31; ACSI comments at 42-43; MCI comments at 32-33; NCTA comments at 42 (competitors' customer information should be included in incumbent LEC databases on the same price, terms, and conditions as the incumbent LEC provides for itself); Teleport comments at 37; Wyoming Commission comments at 23 (nondiscriminatory access for call routing and completion); GCI comments at 13; LCI comments at 18; Vartec comments at 5.

[1049] ACSI comments at 42-43; MCI comments at 32-37. Letter from Leonard Sawicki, MCI Telecommunications to Robert Tanner, Common Carrier Bureau, FCC, July 3, 1996 (MCI July 3 *Ex Parte*). MCI identifies LIDB, Toll Free Calling, Local Number Portability and Directory Assistance databases as call processing databases necessary for new entrants to offer competitive local telephone service. *Id.*

[1050] Parties described the LIDB as a database containing information as to whether a subscriber number is a valid working line, telephone line type, call screening information and validation information for calling cards. *See* MCI July 3 *Ex Parte*. *See In the Matter of Local Exchange Carrier Line Information Database*, Report and Order, 8 FCC Rcd 7130 (1993).

[1051] Toll free calling (*i.e.*, 800, 888 numbers) is a nationwide service generally used to bill the called party. It utilizes a single national SMS and ten regional toll free calling SCP databases. Toll Free Calling SCPs are currently owned by Ameritech, Bell Atlantic, BellSouth, GTE, NYNEX, PacTel, SBC, SNET, Sprint (local), and U S West. The national SMS is owned by Bellcore and operated by a third party administrator. *See In the Matter of Toll Free Service Access Codes*, Notice of Proposed Rulemaking, 10 FCC Rcd 13692 (1995).

[1052] ACTA comments at 14; ALTS comments at 31; Ameritech comments at 47 (call routing and completion functions sometimes require supplemental calling functions or information such as 800 number routing data or credit verification); GTE comments at 24; U S West comments at 48; Bell Atlantic reply at 12-23; GTE reply at 18; NYNEX reply at 34.

[1053] AT&T comments at 23-24; NCTA comments at 42; Telecommunications Resellers Ass'n comments at 36.

[1054] Louisiana Commission comments at 5; *see* Michigan Commission comments at 12 (requires non-discriminatory access to databases necessary for the provision of local exchange service including LIDB and Toll Free Calling databases).

databases via their SS7 network.[1055] GVNW argues that all access to call-related databases must be mediated to prevent unauthorized messages from entering an incumbent's database.[1056]

468. Many potential local competitors argue that access to the incumbent LEC's LIDB should be unbundled.[1057] Most parties agree that query access to the LIDB is technically feasible.[1058] Most potential local competitors contend that they also need access to the incumbent LECs' administrative database (SMS) that is used to input customer data into the LIDB.[1059] AT&T argues that such access is technically feasible, and can be provided to competitors in the same manner that the incumbent LEC now does for itself.[1060] Other parties propose that the Commission require the incumbent LEC to input a competing carriers' customer information into its LIDB for the competitor.[1061]

469. Several parties argue that the Commission should unbundle the Toll Free Calling database for access by competitors.[1062] Most incumbent LECs commented that they already

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[1055] Ameritech comments at 47; BellSouth comments at 43; GTE comments at 40; NYNEX comments at 71; Sprint comments at 40.

[1056] GVNW comment at 29; *see also* MECA comments at 38-39 (competitors should not have direct "on-line" access to incumbent databases).

[1057] ACTA comments at 14; ACSI comments at 42 (access to the LIDB is important to identify presubscribed interexchange carriers); GST comments at 25; ALTS comments at 31.

[1058] AT&T comments at 24; ALTS comments at 31; Ameritech comments at 46-51; Bell Atlantic comments at 27-28; GTE comments at 38-41; Louisiana Commission comments at 5; NCTA comments at 42; NYNEX reply at 34; Teleport comments at 37-38; U S West comments 48.

[1059] AT&T comments at 25-26; American Network Exchange comments at 5 (requesting access to LIDB, but without the current restrictions imposed by *In the Matter of Policies and Rules Concerning Local Exchange Carrier Validation and Billing Information for Joint Use Calling Cards*, CC Docket No. 91-115); ACSI comments at 42; Citizens Utilities comments at 15; NCTA comments at 42; Teleport comments at 37.

[1060] AT&T comments at 26. The conditions, (*e.g.*, type of media, electronic information transfer method) applicable to competitor interconnection with such databases should be identical to those the incumbent LEC uses for itself. *Id.*

[1061] Georgia Commission comments at 21 (under BellSouth-MCIMetro interconnection agreement, BellSouth will enter MCIMetro line information into its LIDB so as to enable MCIMetro customers to participate in alternative billing systems, such as collect calling and third number billing).

[1062] ALTS comments at 31; American Network Exchange comments at 5; ACSI comments at 43; Louisiana Commission comments at 5.

provide query access to their Toll Free Calling databases.[1063] In addition, access to the single national SMS is available under tariff administered by Bellcore.[1064]

470. Parties also argue that they need equal access to 911 and E911 services, including the underlying Automatic Location Indicator (ALI) database.[1065] Several state commissions have also asserted that such access is necessary for new entrants as well as incumbent LECs.[1066] NCTA asserts that competitors must have access to incumbent LEC systems for 911 and E911 services because currently only incumbent LECs maintain them.[1067]

471. Some competitive providers urge the Commission to require incumbent LECs to unbundle access to their AIN.[1068] Several parties argue that AIN should be unbundled to allow competitors to access the incumbent LEC's AIN physically at all points that the incumbent does for itself.[1069] Cable & Wireless argues that larger carriers may be able to design and build their own AIN technology, but smaller carriers may not be able to afford to

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[1063] GTE comments at 40; Sprint comments at 40; NYNEX reply at 34. Reservation and activation of 800 and 888 numbers is available today as an unbundled tariff offering from many common carriers and independent suppliers through the RESP ORG process. *See In the Matter of Toll Free Service Access Codes*, Notice of Proposed Rulemaking, 10 FCC Rcd 13692 (1995).

[1064] Access to individual 800 and 888 numbers is achieved through the RESP ORG process administered by Bellcore. Customers contact a RESP ORG (which can be an IXC, LEC, wireless carrier, or a large organization like Westinghouse) which enters subscriber information into the 800 SMS, assigning a number to the subscriber. The SMS than loads the routing information into the SCPs, at which time the number is working and can be utilized by the subscriber. *See In the Matter of Toll Free Service Access Codes*, Notice of Proposed Rulemaking, 10 FCC Rcd 13692 (1995).

[1065] ACSI comments at 43; ALTS comments at 32; Citizens Utilities comments at 15; Comcast comments at 20; Continental comments at 19; GST comments at 25; MCI comments at 18, 33-34; NCTA comments at 42; Teleport comments at 37.

[1066] Georgia Commission comments at 19; Wyoming Commission comments at 23.

[1067] NCTA comments at 42.

[1068] Ad Hoc Telecommunications Users Committee comments at 24-25; ACTA comments at 18; ACSI at 42; Cable & Wireless comments at 23-25; CompTel comments at 43; GCI comments at 13; MCI comments at 33-34; Cable & Wireless reply at 23-24; USTN reply at 3-4. Letter from Genevieve Morelli, Vice President & general Counsel, CompTel to William Caton, Acting Secretary, FCC, June 14, 1996 (CompTel June 12 *Ex Parte*); Letter from Linda Oliver, Counsel for WorldCom to William Caton, Acting Secretary, FCC, June 14, 1996 (WorldCom June 14 *Ex Parte*).

[1069] CompTel comments at 43 (competitive providers should be able to interconnect with AIN elements at all points that ILECs interconnect currently); MCI comments at 35.

deploy all of the necessary equipment.[1070] MCI argues that access to the incumbent LEC's AIN capabilities would allow them to bring new services to the marketplace and enhance their ability to compete with the incumbent.[1071] Several commenters ask the Commission to adopt the approach of the Louisiana Commission which ordered unbundled access to incumbent LEC databases for all services that the incumbent LEC provides itself, including 800 number, LIDB, and AIN services.[1072] Sprint argues that access to AIN should be unbundled to the extent AIN is used by the incumbent LEC to provide call routing functions.[1073] Many incumbent LECs respond that AIN is still an evolving technology, and therefore it is not technically feasible for the Commission to require unbundled access.[1074] Some incumbent LECs also argue that AIN is not a signaling system or database, and therefore is not a network element under the Act.[1075]

472. A number of parties assert that currently the only technically feasible point of access to the incumbent LEC's AIN is at the incumbent LECs' SCE and SMS.[1076] Several competitive providers contend that access at the SCE and SMS would provide a competing carrier with the same ability to offer AIN-based services as the incumbent LEC without

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[1070] Cable & Wireless comments at 23 (access to the incumbent LEC's existing AIN platform including the SMS database, signaling links and SCPs will allow new entrants to bring new services to the market efficiently and quickly).

[1071] MCI comments at 35.

[1072] ACSI comments at 43; CompTel comments at 43-44; MCI comments at 35 (competitive providers should stand in the same relationship to AIN components as the ILEC does when it offers AIN services to its customers).

[1073] Sprint reply at 20 n.27.

[1074] BellSouth comments at 44; SBC comments at 44; PacTel reply at 22 (*Intelligent Networks* docket contains evidence that AIN unbundling is not technically feasible).

[1075] Bell Atlantic comments at 29; Ameritech reply at 21 (arguing that because there are no services provided via AIN that are not also provided via the switch, that AIN unbundling is not necessary for competitive providers).

[1076] Ameritech comments at 49 (Ameritech claims that it has offered to provide database access via its SMS and SCE in the *Intelligent Networks* proceeding, but also argues that such access is still under development and not yet technically feasible); GTE comments at 42 (record in CC Docket No. 91-346 contains persuasive evidence that, other than access to the SMS, access to AIN network elements is neither technically nor operationally feasible at this time); Sprint comments at 41; Ameritech reply at 15 (agreeing with Sprint's position on SMS access); Bell Atlantic comments at 29-30 (as demonstrated in the *Intelligent Networks* docket, the only point at which it is technically feasible to provide AIN access is at the Service Management System level); LCI comments at 18-19.

having to recreate initially all of the AIN elements.[1077] Ericsson notes that mere unbundling of databases and signaling elements is not likely to allow competitors to create and offer competing AIN services unless they have access to both a service creation environment and service management system.[1078] Bell Atlantic asserts that AIN is not a network element within the scope of the 1996 Act, but allows that, if it were, unbundled access to the SMS should meet the requirements of section 251.[1079] BellSouth, however, contends that the Commission should not attempt to declare undefined "software building blocks" to be network elements.[1080] GVNW further argues that such access will require "partitioning" of incumbent LECs' databases to protect each carriers' information.[1081]

473. In our *Intelligent Networks* docket, several parties, including most incumbent LECs, expressed support for the Commission's proposal to require unbundled access to the SMS by third parties.[1082] Several parties argue that such access is technically feasible.[1083] Most incumbent LECs agree that, of the potential points of access to AIN proposed in our *Intelligent Networks* NPRM, access to the SMS poses the least risk of harm to the public

[1077] Ameritech comments at 49 (working on such access for third parties, although Ameritech believes it is not yet technically feasible); Bell Atlantic comments at 29 (access for third parties at the SMS would satisfy the requirements of section 251); Cable & Wireless comments at 24; Ericsson comments at 5-7; Sprint comments at 40 (access at the SMS is the only technically feasible point of interconnection for AIN that maintains network reliability); GVNW comments at 31 (competitor could create its own services in an incumbent LEC's SMS using the incumbent's SCE, which would protect the integrity of the incumbent LEC's AIN platform); LCI comments at 18 (SMS and SCE access are essential for competitors to provide advanced services).

[1078] Ericsson comments at 6.

[1079] Bell Atlantic comments at 29.

[1080] BellSouth comments at 46.

[1081] GVNW comments at 31.

[1082] *See, e.g.*, BellSouth update comments in CC Docket No. 91-346 at 6; Bell Atlantic comments in CC Docket No. 91-346 at 6; GTE comments in CC Docket No. 91-346 at 21; Central comments in CC Docket No. 91-346 at 12; SNET comments in CC Docket No. 91-346 at 5; NYNEX comments in CC Docket No. 91-346 at 3 n.3, 10-11; Siemens comments in CC Docket No. 91-346 at 2; TIA comments in CC Docket No. 91-346 at 2; MCI comments in CC Docket No. 91-346 at 10; Ericsson reply in CC Docket No. 91-346 at 2-3.

[1083] MCI comments in CC Docket No. 91-346 at 6; Siemens comments in CC Docket No. 91-346 at 2; TIA comments in CC Docket No. 91-346 at 2.

switched network.[1084] Many of these commenters argue that access to the SMS would provide competitors with an opportunity to create innovative call processing services.[1085] U S West, however, contends that, since third parties using SMS access would be dependent on incumbent LEC software at the SCE, competitors would not be satisfied with such access because it would not allow them to develop their own proprietary services.[1086] Other parties argue that SMS access will not provide significant benefits to third parties because of the limitations inherent in the service creation parameters established by the LECs.[1087]

474. Several parties argue that incumbent LEC SCP databases and AIN triggers in the incumbent LEC switch should be unbundled for a requesting carrier.[1088] Most incumbent LECs argue that sufficient mediation needs to be developed and implemented before any third party interconnection to AIN will be technically feasible.[1089] Some parties, however, counter that there is sufficient screening in the STP and that incumbent LECs should be required to accept AIN signaling messages from competitors' AIN SCP databases without additional mediation.[1090] AT&T argues that the refusal to carry AIN messages prevents competitive

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[1084] Bell Atlantic comments in CC Docket No. 91-346 at 6-7; BellSouth comments in CC Docket No. 91-346 at 12, 13; GTE comments in CC Docket No. 91-346 at 19, 21; NYNEX comments in CC Docket No. 91-346 at 3; PacTel comments in CC Docket No. 91-346 at 20-21; SBC comments in CC Docket No. 91-346 at 5, 8; U S West comments in CC Docket No. 91-346 at 52; United and Central comments in CC Docket No. 91-346 at 1.

[1085] GSA comments in CC Docket No. 91-346 at 3; SNET comments in CC Docket No. 91-346 at 2; Siemens comments in CC Docket No. 91-346 at 2; TIA comments in CC Docket No. 91-346 at 2; MCI in CC Docket No. 91-346 comments at 10; Ericsson reply in CC Docket No. 91-346 at 2-3.

[1086] U S West comments in CC Docket No. 91-346 at 53; Ad Hoc Telecommunications Users Committee comments in CC Docket No. 91-346 at 11 (incumbent LECs' ability to mimic third party services created in the incumbent LEC's SCE will diminish the incentive of third parties to create new services that would compete with LEC AIN offerings).

[1087] AT&T comments in CC Docket No. 91-346 at 5-11 (competitors would be restricted to the particular LEC's AIN architecture and software platform, preventing the creation and deployment of unique AIN services); ALLNET comments in CC Docket No. 91-346 at 2; Ad Hoc Telecommunications Users Committee comments in CC Docket No. 91-346 at 8-9.

[1088] Ad Hoc Telecommunications Users Committee comments at 17; GCI at 12; Louisiana Commission at 5; LCI comments at 18.

[1089] BellSouth comments at 47. Mediation refers to additional screening software or devices to prevent incorrect or unacceptable AIN messages from reaching the switch or SCP database. *Id.*

[1090] ACTA comments at 21 (mediation devices will increase post dial delay and significantly increase competitors costs); CompTel comments at 45 (since section 251 unbundling is limited to telecommunications carriers, who already adhere to network security and integrity requirements as well as rigorous testing procedures, there is no need for mediation for access to AIN elements).

carriers from offering the same advanced AIN and CLASS services as the incumbent.[1091] AT&T further contends that mediation will not be necessary, because just as carriers are certified before interconnecting with other carriers' SS7 networks, carriers can be certified for AIN.[1092] Some competitors argue that a short transitional period of mediated access could be established to allow time for the adoption of standards to ensure network integrity, but only if incumbent LECs were required to use the same mediated access.[1093]

475. A few parties, including AT&T and MCI, propose unbundling of AIN in order to allow competing carriers to interconnect their own SCP database to the incumbent LECs' AIN so that competing carriers could provide call processing instructions to the incumbent LEC's switch for calls to or from its own customers.[1094] AT&T argues that this would allow it to offer different services to the customer than does the incumbent LEC, which would increase competition in the local exchange market.[1095] Ericsson admits that this is "an attractive concept which might increase competition" but argues that there are numerous technical issues that must be resolved, including billing and service interaction issues.[1096] Incumbent LECs, manufacturers and other parties argue that it is not technically feasible for a competing provider to connect its own alternative call processing database to the incumbent

[1091] AT&T reply at 20 (arguing that such a refusal violates the requirement of section 251(c)(2) for interconnection on "just, reasonable and nondiscriminatory" terms).

[1092] *See* Letter in CC Docket No. 91-346 from Bruce Cox, Government Affairs Director, AT&T, to William F. Caton, Acting Secretary, FCC, Aug. 21, 1995 (*AT&T Intelligent Networks Proposal*) Attachment at 2; *but see* PacTel reply at 22 (certification would not prevent competitors from sending erroneous messages to an incumbent LEC's AIN SCP which could lead to unauthorized changes in a customer's service or PIC).

[1093] Cable & Wireless comments at 25; MCI comments at 36; ACSI comments at 44.

[1094] ACTA comments at 21; AT&T comments at 23-25; Cable & Wireless comments at 24; MCI comments at 18, 33 (arguing that such interconnection is supported by the findings of the Information Industry Liaison Committee (IILC) Issue #026 Task Force on Long Term Unbundling); CompTel comments at 44; AT&T reply at 19-20.

[1095] AT&T comments at 23-25. AT&T admits that this arrangement would require carriers to agree upon an expanded signaling message set for AIN call processing, but it argues that such messages are already defined by Bellcore and it is the refusal of incumbent LECs' to accept them that prevents its deployment. *Id.*

[1096] Ericsson comments at 6.

LEC signaling network.[1097] Many parties, including virtually all incumbent LECs, argue against allowing a competing carrier or reseller to connect its own alternative call processing database directly to the incumbent LEC's SS7 network because of the network reliability and security issues it creates.[1098] These parties warn that requiring such unbundled access to AIN could make an incumbent LEC's switch vulnerable to inappropriate routing and billing instructions from the competitor's SCP.[1099] BellSouth argues that the *Intelligent Networks* docket supports a finding that this type of AIN unbundling is not technically feasible.[1100] Sprint contends that it could not forecast capacity needs for a competing carrier's alternative database in order to identify its own network capacity requirements.[1101] GVNW adds that any national rule requiring such a form of interconnection would require many small incumbent LECs to make uneconomic upgrades of their switches in order to accommodate it.[1102]

[1097] Sprint comments at 41 (there are significant network reliability issues involved with introducing a third party database to an SS7 network); BellSouth comments at 46 (before interconnection of a third-party database to an incumbent LEC's signaling system, more development is still needed for routing, protocol screening, call gapping, resource contention, overload control, feature interaction management and billing concerns for such an arrangement); Ericsson comments at 6 (interconnection of a third-party database to an incumbent LEC's signaling system might promote competition but there are complex technical issues to address before such a scheme could become technically feasible); Teleport comments at 37-38.

[1098] BellSouth comments at 45-46 (introduction of a third-party database to an incumbent LEC's signaling system creates the potential for fraud, sabotage, and slamming of the incumbent LEC's customers); SBC comments at 45 (record in CC Docket No. 91-346 is replete with evidence demonstrating the current technical infeasibility of interconnection of third-party databases to an incumbent LEC' signaling system); Sprint comments at 41 (cannot test for system validation and feature interaction); Teleport comments at 37-38; GVNW comments at 30-31 (such interconnection must be mediated to protect both networks from potential harm from incorrect SS7 messages).

[1099] BellSouth comments at 46; Ericsson comments at 6; TCG comments at 37-38; GTE reply at 21-22 (third-party access to AIN triggers not technically feasible without mediation because of network reliability and service integrity issues); Teleport comments at 37-38; *but see* Cable &Wireless comments at 24 (incumbent LEC arguments concerning network integrity are analogous to AT&T arguments in *Carterfone* that non-Bell System equipment could cause malfunctions in the network).

[1100] BellSouth comments at 45-46 (areas still needing resolution include routing, protocol screening, call gapping, resource contention, overload control, feature interaction management, and billing). *See also* Letter in CC Docket No. 91-346 from Karen Weis, Division Manager, AT&T, and Ben G. Almond, Executive Director, Federal Regulatory, BellSouth, to William F. Caton, Acting Secretary, FCC, Dec. 14, 1995 (*AT&T-BellSouth Intelligent Networks Joint Report*). The *AT&T-Bell South Intelligent Networks Joint Report* detailed the results of their laboratory-to-laboratory test concerning the interconnection of an AT&T SCP to BellSouth's SSP. *Id.*

[1101] Sprint comments at 41.

[1102] GVNW comments at 30-31.

476. Many parties contend that further testing of AIN is needed before further access and interconnection between carriers can be considered technically feasible.[1103] Most of the BOCs support a two year testing plan for the industry to further investigate issues relating to AIN before moving forward to third party interconnection.[1104] Several parties, however, urge the Commission to reject the LECs' proposed *Intelligent Networks* testing plan. argue that it is not necessary to ensure network integrity and that it is inconsistent with the 1996 Act.[1105] Parties opposed to the LECs' testing plan assert that it is vague and revisits work that has already been done in existing industry fora.[1106] Supporters of the LECs' testing plan, however, counter that they are willing to consider working within existing industry fora.[1107] As described in the *Intelligent Networks* docket, the LEC testing plan will take place over a two year period with final recommendations to be decided by the participants themselves. Some competitors, while allowing for the need for further testing, advocate imposing a mandatory time limit on the resolution of the outstanding mediation issues for unbundled access to AIN.[1108]

477. Some commenters believe that a Commission order to unbundle AIN functionalities would satisfy the objectives of the *Intelligent Networks* proceeding.[1109] AT&T

[1103] Bell Atlantic comments at 29 n.10; BellSouth comments at 47; Ericsson comments at 6-7; GTE comments at 42; GVNW comments at 32; Lincoln Tel. comments at 10; SBC comments at 46; U S West comments at 58.

[1104] Bell Atlantic comments at 29 n.10; BellSouth comments at 47; GTE comments at 42; Lincoln Tel. comments at 10; SBC comments at 44 (Commission should issue order in CC Docket No. 91-346 that endorses the Tier 1 LECs' joint proposal for an industry IN project); U S West comments at 58 (industry testing plan will lead to development of non-proprietary AIN interfaces). *See* Letter in CC Docket No. 91-346 from Sandra Wagner, Director, Federal Regulatory, SBC Communications, Inc., to William F. Caton, Acting Secretary, FCC, June 23, 1995 (*LEC Intelligent Networks Proposal*). Active participants in the LEC Proposal are Bell Atlantic, GTE, PacTel, SBC and U S West. Other incumbent LECs supporting the LEC Proposal, but not currently "active" include BellSouth, Lincoln Tel., SNET, and Sprint.

[1105] Cable & Wireless comments at 26; MCI comments at 36-37. *See also* AT&T update comments in Docket 91-346 at 5-6.

[1106] MCI comments at 36-37; *but see* GTE reply at 22 (testing is necessary and is not intended for delay).

[1107] Letter in CC Docket No. 91-346 from Sandra Wagner, Director, Federal Regulatory, SBC Communications, to William Caton, Acting Secretary, FCC, May 22, 1996 (SBC May 22 *Intelligent Networks Ex Parte*). SBC contends that the Joint LEC project proposed creating a new forum directly in response to MCI's prior assertions that ATIS sponsored forums were ineffective in addressing interconnection issues. *Id.* at 4-5.

[1108] Cable & Wireless comments at 25; MCI comments at 36 (advocating that the Commission refer outstanding issues from the IILC Issue #026 consensus document to an established forum and that it should monitor progress to ensure implementation of access to the remaining interface points is accomplished within six months of the end of an initial negotiation or arbitration process).

[1109] AT&T comments at 25 n.29; Cable & Wireless comments at 26.

asserts that, if unbundled signaling explicitly includes the exchange of AIN signaling messages between incumbent LEC switches and competitor's SCPs, then the Commission does not need to pursue CC Docket No. 91-346 further because its objectives will be met in this proceeding.[1110] SBC, however, urges the Commission not to merge the *Intelligent Networks* proceeding into this docket.[1111]

c. Discussion

478. In the interconnection section above, we conclude that the exchange of signaling information between LECs necessary to exchange traffic and access call related databases was included within the interconnection obligation of section 251(c)(2).[1112] Thus, notwithstanding any obligations under section 251(c)(3), incumbent LECs are required to accept and provide signaling in accordance with the exchange of traffic between interconnecting networks. We conclude that this exchange of signaling information may occur through an STP-to-STP interconnection.

(1) Signaling Links and STP

479. We conclude that incumbent LECs, upon request, must provide nondiscriminatory access to their signaling links and STPs on an unbundled basis. We believe it is technically feasible for incumbent LECs to provide such access, and that such access is critical to entry in the local exchange market. Further, the 1996 Act requires BOCs to provide "nondiscriminatory access to databases and associated signaling necessary for call routing and completion" as a precondition for entry into in-region interLATA services.[1113] Thus, it appears that Congress contemplated the unbundling of signaling systems as network elements.

[1110] AT&T comments at 25 n.29.

[1111] SBC comments at 46 (arguing that record in CC Docket No. 91-346 is already complete).

[1112] *See supra*, Section IV. We emphasize, in Section V.J.4.c.(4), such exchange of signaling information does not include the exchange of AIN signaling information between networks for the purpose of providing AIN messages to the incumbent LEC's switch from a competitor's SCP database.

[1113] 47 U.S.C. § 271(c)(2)(B)(x). *See also* statement of Sen. Pressler, noting that "access to signaling and databases [is] important if you are going to compete and get into the market." 141 Cong. Rec. S8163 (June 12, 1995).

480. We conclude that access to unbundled signaling links and STPs is technically feasible.[1114] The majority of commenters, including incumbent LECs, agree that it is technically feasible to provide unbundled access to signaling links and STPs.[1115] Parties note that incumbent LECs and signaling aggregators already provide such access.[1116] In addition, several state commissions already require incumbent LECs to provide unbundled elements of SS7 networks.[1117] Because of the screening role played by the STP and associated network reliability concerns that were raised in the record, however, we do not require that incumbent LECs permit requesting carriers to link their own STPs directly to the incumbent's switch or call-related databases.[1118] We take a deliberately conservative approach here because of significant evidence in the record and we note that mere conclusory objections to technical feasibility would not alone be sufficient evidence.

481. Under section 251(d)(2)(A), the Commission must consider whether access to proprietary network elements is necessary.[1119] Commenters did not identify proprietary concerns with signaling protocols for the SS7 network.[1120] Moreover, in general, SS7 signaling networks adhere to Bellcore standards, rather then LEC-specific protocols and provide seamless interconnectivity between networks.[1121] Thus, we conclude that the

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[1114] As discussed *infra*, we conclude that it is not technically feasible to unbundle the SCP from its associated STP, therefore, we do not require incumbent LECs to unbundle those signaling links connecting SCPs to STPs. We emphasize that we take this conservative course here because of the real evidence in the record and note that mere conclusory objections to technical feasibility will not be considered sufficient evidence of such.

[1115] *See, e.g.*, AT&T comments at 23; TIA comments at 14; U S West comments at 48; PacTel reply at 21-22.

[1116] *See, e.g.*, BellSouth comments at 43; GVNW comments at 29; NYNEX comments at 71; USTN reply at 1.

[1117] *See, e.g.*, Colorado Commission comments at 24; Michigan Commission comments at 12; Texas Commission comments at 19.

[1118] *See, e.g.*, Ameritech comments at 50; Bell Atlantic comments at 27; MCI comments at 34-35; Sprint comments at 40. We note, however, that we do not preempt those state commissions that have required incumbent LECs to do so. *See Illinois Wholesale Order*.

[1119] 47 U.S.C. § 251(d)(2)(A).

[1120] AT&T argues that there are no proprietary information issues because signaling information is generated in the incumbent LEC's switch and is provisioned entirely by the incumbent LEC. AT&T comments at 26.

[1121] A few commenters urge that we prohibit incumbent LECs from taking a proprietary interest in signaling protocols. These parties argue that such a proprietary interest conflicts with the continuing necessity for open access to signaling protocols to maintain the seamless nationwide "network of networks." *See* Frontier comments at 16 n.31; Wyoming Commission comments at 24.

unbundling of signaling links and STPs does not present proprietary concerns with respect to the incumbent LEC.

482. Under section 251(d)(2)(B), the Commission must consider whether "the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[1122] Access to signaling systems continues to be a critical element to providing competing local exchange and exchange access service. The vast majority of calls made over incumbent LEC networks are set-up and controlled by separate signaling networks. Incumbent LECs argue that access to signaling systems and associated databases is already available from other providers and therefore, they should not have to unbundle them for access by competitors.[1123] As discussed above, section 251(d)(2)(B) only relieves an incumbent LEC of its unbundling obligation if other unbundled elements in its network could provide the same service without diminution of quality. Because alternative signaling methods, such as in-band signaling, would provide a lower quality of service,[1124] we conclude that a competitor's ability to provide service would be significantly impaired if it did not have access to incumbent LECs' unbundled signaling links and STPs.

483. The purchase of unbundled elements of the SS7 network gives the competitive provider the right to use those elements for signaling between its switches (including unbundled switching elements), between its switches and the incumbent LEC's switches, and between its switches and those third party networks with which the incumbent LEC's SS7 network is interconnected. When a competitive provider purchases unbundled switching from the incumbent LEC, the incumbent LEC must provide nondiscriminatory access to its SS7 network from that switch in the same manner in which it obtains such access itself. Carriers that provide their own switching facilities should be able to access the incumbent LEC's SS7 network for each of their switches via a signaling link between their switch and an incumbent

[1122] 47 U.S.C. § 251(d)(2)(B).

[1123] *See, e.g.*, Bell Atlantic comments at 27-28; BellSouth comments at 44; GTE comments at 40-41; NYNEX comments at 71.

[1124] SS7 network signaling is critical in the provision of modern telecommunications services, allowing signaling messages to travel separately from the voice path for individual calls, increasing efficiency and making possible a host of new signaling-based services. AT&T comments at 23. Popular features like Calling Number Identification (Caller ID) and Calling Name Identification, as well as enhanced call set-up functions and such Custom Calling features as Repeat Call and Return Call, would be unavailable without SS7 capabilities. Bell Atlantic comments at Attachment 3, 17.

LEC's STP.[1125] Competitive carriers should be able to make this connection in the same manner as an incumbent LEC connects one of its own switches to the STP. This could be accomplished by the incumbent providing an unbundled signaling link from its STP to the competitor's switch or by a competitor bringing a signaling link from its switch to the incumbent LEC's STP.

(2) Call-Related Databases

484. We conclude that incumbent LECs, upon request, must provide nondiscriminatory access on an unbundled basis to their call-related databases[1126] for the purpose of switch query and database response through the SS7 network.[1127] Thus, for example, we find that it is technically feasible for incumbent LECs to provide access to the Line Information Database (LIDB), the Toll Free Calling Database and Number Portability downstream databases.[1128] The vast majority of parties, including incumbent LECs, agree that it is technically feasible to provide access to the LIDB and the Toll Free Calling databases at an STP linked to the database.[1129] Several state commissions also report that they have ordered incumbent LECs' to provide such access to the LIDB and the Toll Free Calling

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[1125] Competitors should be able to interconnect their own switches to the incumbent LEC's signaling system in any technically feasible manner. Competitors may bring a signaling "A" link from their switch to the incumbent LEC's STP. CAPs use this type of connection today to connect their tandem switches to incumbent LECs' STPs. AT&T comments at 24 n.26. Competitors might also link their switch to their own STP, and then connect to an incumbent LEC's STP via a signaling "D"or "B" link.

[1126] Call-related databases are those SS7 databases used for billing and collection or used in the transmission, routing, or other provision of a telecommunications service.

[1127] Query and response access to a call-related database is intended to require the incumbent LEC only to provide access to its call-related databases as is necessary to permit a competing provider's switch (including the use of unbundled switching) to access the call-related database functions supported by that database. The incumbent LEC may mediate or restrict access to that necessary for the competing provider to provide such services as are supported by the database.

[1128] AT&T indicates that for LIDB and 800/888 database queries standard TCAP messages have been established, and reliability, security, provisioning, and billing issues have been addressed. Letter from Karen Weis, Division Manager, AT&T to William Caton, Acting Secretary, FCC, July 16, 1996 (AT&T July 16 *Ex Parte*). Bell Atlantic states that it currently provides interconnection for LIDB and 800 databases. Bell Atlantic comments at 2. Number portability "downstream databases" are defined in Part 51 of our rules as adopted by this Order. *See In the Matter of Telephone Number Portability*, First Report and Order and Further Notice of Proposed Rulemaking, CC Docket No. 95-116, FCC 96-286 (rel. July 2, 1996).

[1129] *See, e.g.*, Ameritech comments at 47; AT&T comments at 24; ALTS comments at 31; GTE comments at 40; MCI comments at 34-35; NYNEX comments at 71; U S West comments at 48.

databases.[1130] We require incumbent LECs to provide this access to their call-related databases by means of physical access at the STP linked to the unbundled database. We find that such access is critical to entry in the local exchange market.

485. We conclude that it is not technically feasible to unbundle the SCP from its associated STP. We note that the overwhelming majority of commenters contend that it is not technically feasible to access call-related databases in a manner other than by connection at the STP directly linked to the call-related database.[1131] Parties argue that the STP is designed to provide mediation and screening functions for the SS7 network that are not performed at the switch or database.[1132] We, therefore, emphasize that access to call-related databases must be provided through interconnection at the STP and that we do not require direct access to call-related databases.

486. Several commenters also identified access to call-related databases used in the incumbent's AIN to be critical to fair competition in the local market,[1133] and some state commissions have ordered incumbent LECs to provide access to AIN databases.[1134] We conclude that such access is technically feasible via an STP for those call-related databases used in the incumbent LEC's AIN.[1135] First, of course, when a new entrant purchases an incumbent's local switching element it is technically feasible for the new entrant to use the incumbent's SCP element in the same manner, and via the same signaling links, as the incumbent itself. Thus, we find no technical impediments in the record with regard to such access when a requesting carrier is also purchasing a local switching element associated with the AIN call-related database.

[1130] Louisiana Commission comments at 5; Michigan Commission comments at 12; PacTel comments at Appendix A, 7 (California Commission has required such access).

[1131] *See, e.g.*, Sprint comments at 40; AT&T reply at 19-20 n.32.

[1132] *See, e.g.*, GTE comments at 40; USTA comments at 36.

[1133] Cable & Wireless comments at 24; Citizens Utilities comments at 15; MCI comments at 32-33; TIA comments at 14; CompTel comments at 43; AT&T comments at 23-26.

[1134] Louisiana Commission comments at 5; Wyoming Commission comments at 23-24; *see also Illinois Wholesale Order*.

[1135] AT&T comments at 23-26; CompTel comments at 43; MCI comments at 36; Letter from Wendy Blueming, Regulatory Affairs and Public Policy, SNET to William Caton, Acting Secretary, FCC, July 23, 1996 (SNET July 23 *Ex Parte*); AT&T July 16 *Ex Parte*.

487. Further, we conclude that when a new entrant deploys its own switch, and links it to the incumbent LEC's signaling system, it is technically feasible for the incumbent to provide access to the incumbent's SCP to provide AIN-supported services to customers served by the new entrant's switch. Some SS7 network services resellers currently provide such access.[1136] Other potential local competitors present additional evidence supporting the technical feasibility of such access.[1137] Unlike the situation where a competitor's SCP would control the incumbent's switch (which is discussed below in section V.I.4.c.(4)), in this scenario, the incumbent's SCP will respond to and control the competitor's switch, and potential competitors that have commented in the record do not express network reliability concerns with regard to such control.[1138] Further, like the software resident in a switch, the incumbent LEC's applications resident in an SCP are merely part of the overall software and hardware making up the SCP facility. Thus, carriers purchasing access under either scenario above may use the incumbent's service applications in addition to their own.[1139]

488. Although we conclude that access to incumbent AIN SCPs is technically feasible, we agree with BellSouth that such access may present the need for mediation mechanisms to, among other things, protect data in incumbent AIN SCPs and ensure against excessive traffic volumes.[1140] In addition, there may be mediation issues a competing carrier

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[1134] SNET July 23 *Ex Parte*; Letter from Stephen Kraskin, Illuminet (USTN) to Office of the Secretary, FCC July 23, 1996 (USTN July 23 *Ex Parte*).

[1137] *See* AT&T July 16 *Ex Parte*; *see also* AT&T comments at 23-26; CompTel comments at 43; MCI comments at 36.

[1138] *See* AT&T July 16 *Ex Parte*. AT&T asserts that no additional or unique reliability problems would be created that have not already been addressed and resolved by those incumbent LECs who have proposed SMS access for third parties in the Intelligent Networks proceeding. *Id.*

[1139] *See infra*, Section V.I.4.c.(3) on unbundled access to the incumbent LEC's SCE and SMS.

[1140] Letter from W.W. Jordan, Executive Director - Federal Regulatory, BellSouth to William Caton, Acting Secretary, FCC, July 16, 1996 (BellSouth July 16 *Ex Parte*) ("With a BellSouth SCP to a ALEC SSP [switch] interconnection arrangement, network reliability and security concerns, from BellSouth's perspective, would largely be limited to issues associated with traffic management."); Letter from James Smith, Director--Federal Relations, Ameritech to William Caton, Acting Secretary, FCC, July 17, 1996 (Ameritech July 17 *Ex Parte*) ("The volume of queries sent from the CLEC SSP [switch] could overload the LEC SCP, interfering with the operation of the service provided to that CLEC, or with other services which may operate on the LEC's SCP."); Letter from Joseph Mulieri, Director--FCC Relations, Bell Atlantic to Robert S. Tanner, Attorney Advisor, FCC, July 18, 1996 (Bell Atlantic July 18 *Ex Parte*). BellSouth also raises the need for mediation to prevent unauthorized modification of information within an incumbent LEC's AIN SCP database. BellSouth July 16 *Ex Parte*. Incumbent LECs' comments in this proceeding and in the IN docket generally focus on the need for mediation to prevent a competitor's database from sending inappropriate AIN signaling information to the incumbent LEC's switch (*see infra* Section V.I.4.c.(4)). *See* PacTel comments at 61-62; BellSouth comments at 45-46; Bell Atlantic comments at Appendix 3, 18-19; U S West comments in CC Docket No. 91-346 at 73-74, 84; NYNEX comments in CC Docket No. 91-346 at 14-15; SBC comments in CC Docket No. 91-346 at 8-9.

will need to address before requesting such access.[1141] Accordingly, if parties are unable to agree to appropriate mediation mechanisms through negotiations, we conclude that during arbitration of such issues the states (or the Commission acting pursuant to section 252(e)(5)) must consider whether such mediation mechanisms will be available and will adequately protect against intentional or unintentional misuse of the incumbent's AIN facilities. We encourage incumbent LECs and competitive carriers to participate in industry fora and industry testing to resolve outstanding mediation concerns.[1142] Incumbent LECs may establish reasonable certification and testing programs for carriers proposing to access AIN call related databases in a manner similar to those used for SS7 certification.[1143]

489. We recognize that providing unbundled access to AIN call-related databases at cost, and in particular providing access to the incumbent LEC's software applications that reside in the AIN databases, may reduce the incumbent's incentive to develop new and advanced services using AIN. In the near term, however, requiring entrants to bear the cost of deploying a fully redundant network architecture, including AIN databases and their application software, would constitute a significant barrier to market entry for competitive carriers. As local service markets develop, however, competition may reduce the incumbent LEC's control over bottleneck facilities and increase the importance of innovation. In those circumstances it is important that incumbent LECs have the incentive to develop unique and innovative services supported by AIN. Therefore at a later date, we will revisit the proper balance between providing unbundled access and maintaining the incentives of incumbent LECs to innovate.

490. Parties generally do not identify proprietary concerns when access to call-related databases is provided via STPs. In general, signaling protocols used to access call-related databases adhere to open Bellcore standards. Parties also do not raise proprietary concerns with specific call-related databases themselves. Today, many separate carriers access incumbent LEC Toll Free Calling and LIDB databases for the proper routing and billing of calls.[1144] Thus, we conclude that, in general, unbundled access to call-related databases does not present proprietary concerns with respect to section 251(d)(2)(A). Incumbent LECs may,

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[1141] Mediation may be necessary for requesting carriers to ensure that inadvertent feature interactions, network management control and customer privacy concerns do not arise from such access. *See e.g.*, Ameritech July 17 *Ex Parte*.

[1142] *See, e.g.*, Christine Maglott, *Information Industry Liaison Committee Wrestles with Mediation Issues*, ATIS News, 3, Vol. 11, No.3, May-June, 1996.

[1143] SBC notes that carriers proposing to gain access to its SS7 network and gather information from its SCP must be certified and enter into contractual agreements for information access and proper billing. SBC comments at 47-48.

[1144] *See* AT&T July 16 *Ex Parte*.

however, present such proprietary concerns in the arbitration process with regard to specific databases, and states (or the Commission acting pursuant to section 252(e)(5)) may take action to limit unnecessary access to proprietary information.

491. We also conclude that denying access to call-related databases would impair the ability of a competing provider to offer services such as Alternative Billing Services and AIN-based services. AIN-based services represent the cutting edge of telephone exchange services, and competitors would be at a significant disadvantage if they were forced to develop their own AIN capability immediately. In addition, the record indicates that deployment of call-related databases in the near term would represent a substantial cost to new entrants. As mentioned above, incumbent LECs argue that access to certain call-related databases is already competitively available and therefore they should not have to unbundle access to them.[1145] As discussed above, however, section 251(d)(2)(B) would only relieve an incumbent LEC of its unbundling obligation if other unbundled elements in its network could provide the same service without diminution of quality. Because of the absence of such elements, we conclude that a competitor's ability to provide service would be significantly impaired if it did not have unbundled access to incumbent LECs' call-related databases, including the LIDB, Toll Free Calling, AIN, and number portability downstream databases for the purpose of switch query and database response through the SS7 network.

492. We also conclude that access to call-related databases as discussed above, and access to the service management system discussed below, must be provided to, and obtained by, requesting carriers in a manner that complies with section 222 of the Act. Section 222, which was effective upon adoption, sets out requirements for privacy of customer information. Section 222(a) provides that all telecommunications carriers have a duty to protect the confidentiality of proprietary information of other carriers, including resellers, equipment manufacturers, and customers. Section 222(b) requires that telecommunications carriers that use proprietary information obtained from another telecommunications carrier in providing any telecommunications service "shall use that information only for such purpose, and shall not use such information for its own marketing purposes."[1146] Sections 222(c) and (d) provide protection for, and limitations on the use of, and access to, customer proprietary network

[1145] We note that competitive provision of AIN SCP database services is not evidenced in the record.

[1146] 47 U.S.C. § 222(b).

information (CPNI).[1147] We note that we have initiated a proceeding to clarify the obligations of carriers with regard to section 222(c) and (d).[1148]

(3) Service Management Systems

493. Finally, we conclude that incumbent LECs should provide access, on an unbundled basis, to the service management systems (SMS), which allow competitors to create, modify, or update information in call-related databases. We believe it is technically feasible for incumbent LECs to provide access to the SMS in the same manner and method that they provide for their own access. We find that such access is necessary for competitors to effectively use call-related databases, which we have already found to be critical to entry in the local exchange market.

494. Commenters argue that they need equal access to incumbent LECs' SMSs to write or populate their own information in call-related databases.[1149] As discussed above, information bound for many call-related databases is entered first at an off-line SMS, which then downloads the information to the call-related database for real time use on the network. We find that competing provider access to the SMS is technically feasible if it is provided in the same or equivalent manner that the incumbent LEC currently uses to provide such access to itself.[1150] For example, if the incumbent LEC inputs information into the SMS using magnetic tapes, the competitive carrier must be able to create and submit magnetic tapes for the incumbent to input into the SMS in the same way the incumbent inputs its own magnetic tapes. If the incumbent accesses the SMS through an electronic interface, the competitive carrier should be able to access the SMS through an equivalent electronic interface.[1151] We further conclude that, whatever method is used, the incumbent LEC must provide the

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[1147] Section 222(f)(1) defines CPNI as "information that relates to the quantity, technical configuration, type, destination, and amount of use of a telecommunications service subscribed to by any customer of a telecommunications carrier, and that is made available to the carrier by the customer solely by virtue of the carrier-customer relationship." 47 U.S.C. § 222(f)(1)(A).

[1148] *See Implementation of the Telecommunications Act of 1996: Telecommunications Carriers' Use of Customer Proprietary Network Information and other Customer Information*, Notice of Proposed Rulemaking, CC Docket No. 96-115, FCC 96-221 (rel. May 17, 1996).

[1149] AT&T comments at 26; MCI comments at 34-35.

[1150] Many carriers currently submit such information to incumbent LECs or third party SMSs. USTN reply at 1-4; Bell Atlantic comments at Attachment 3, 16; GTE comments at 40-41 n.61.

[1151] For example, access to the AIN SMS is accomplished through the SCE, which is a computer environment for the design and test of AIN based services.

competing carrier with the information necessary to correctly enter or format for entry the information relevant for input into the particular incumbent LEC SMS.

495. Specifically with respect to AIN, we find that the record in the *Intelligent Networks* proceeding supports access to the SMS.[1152] A competing carrier seeking access to the SMS that is part of the incumbent LEC's AIN would do so through the incumbent LEC's service creation environment (SCE), an interface used to design, create, and test AIN supported services. Software successfully tested in the SCE is transferred to the SMS, where it is then downloaded into an SCP database for active deployment on the network. We are persuaded that the risk of harm to the public switched network from such access to the SMS is minimized by the technical safeguards inherent in the SCE and SMS. As described in comments filed in the *Intelligent Networks* docket, competitors accessing the SCE and SMS would not communicate directly with the LEC's database or switch.[1153] We therefore conclude that such access is technically feasible, and that incumbent LECs should provide requesting carriers with the same access to design, create, test, and deploy AIN-based services at the SMS that the incumbent LEC provides for itself.[1154] While many incumbent LECs express concerns with the technical feasibility of access to AIN, we conclude that those

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[1152] *See Intelligent Networks*, Notice of Proposed Rulemaking, 8 FCC Rcd 6813 (1993). In the *Intelligent Networks* proceeding, most incumbent LECs supported SMS access. *See* GTE comments in CC Docket No. 91-346 at 21; United and Central comments in CC Docket No. 91-346 at 12; SNET comments in CC Docket No. 91-346 at 5; NYNEX comments in CC Docket No. 91-346 at 3 n.3, 10-11; BellSouth update comments in CC Docket No. 91-346 at 6; Bell Atlantic comments in CC Docket No. 91-346 at 6. Other parties, including potential competitors and manufacturers, also supported SMS access. *See* Siemens comments in CC Docket No. 91-346 at 2; TIA comments in CC Docket No. 91-346 at 2; MCI comments in CC Docket No. 91-346 at 10; Ericsson reply in CC Docket No. 91-346 at 2-3. Many commenters asserted that SMS access through the SCE would provide a valuable opportunity for third parties to create services. *See* GSA comments in CC Docket No. 91-346 at 3; SNET comments in CC Docket No. 91-346 at 2; Siemens comments in CC Docket No. 91-346 at 2; Ericsson reply in CC Docket No. 91-346 at 2-3; TIA comments in CC Docket No. 91-346 at 2; MCI comments in CC Docket No. 91-346 at 10.

[1153] In their comments, BellSouth and Bell Atlantic describe the way they provide or plan to provide access to the SMS for third parties. Bell Atlantic proposes to first develop and deploy AIN services based on customer request and then subsequently to allow third parties themselves to create AIN services at a terminal either in a Bell Atlantic office or a third party office. Bell Atlantic comments in CC Docket No. 91-346 at 6. BellSouth proposes to permit third parties to use the service logic resident on BellSouth's service creation environment to create AIN services. BellSouth update reply in CC Docket No. 91-346 at 10.

[1154] Incumbent LECs that have deployed AIN must provide such access to competing carriers that will allow them to develop call processing applications pursuant to the same parameters the incumbent LEC uses itself, such as the time-of-day and origination of call parameters. BellSouth's recently proposed service to provide access to its SCE and SMS appears to be an example of the type of access to the SMS that incumbent LECs must provide to competitors upon request. *Pleading Cycle Established for Comments on BellSouth Telecommunications, Inc.'s Petition for Expedited Waiver of Part 69 Rules*, Public Notice, DA 96-27 (Jan. 17, 1996) (*BellSouth Part 69 Waiver Petition*).

concerns deal primarily with the interconnection of third party AIN SCP databases to the incumbent LEC's AIN and not access to the SCE and SMS.[1155]

496. We recognize that, although technically feasible, providing nondiscriminatory access to the SMS and SCE for the creation and deployment of AIN services may require some modifications, including appropriate mediation, to accommodate such access by requesting carriers. We note that BellSouth is currently prepared to tariff and offer such access to third parties, and other incumbent LECs, including Bell Atlantic and Ameritech, indicate that they have made significant progress towards implementing such access.[1156] Therefore, if parties are unable to agree to appropriate mediation mechanisms through negotiations, we conclude that during arbitration of such issues the states (or the Commission acting pursuant to section 252(e)(5)) must consider whether such mediation mechanisms will be available and will adequately protect against intentional or unintentional misuses of the incumbent's AIN facilities. We again encourage incumbent LECs and competitive carriers to participate in industry fora and industry testing to resolve outstanding mediation concerns.

497. Parties did identify some proprietary concerns regarding access to the SCE and SMS used in the incumbent LEC's AIN. Some incumbent LECs contend that the interface used at the SCE is proprietary in nature.[1157] GVNW argues that specific AIN-based services designed by carriers should be proprietary in nature.[1158] Competitors correctly argue that AIN can be used, not only for telecommunication services traditionally supported by the switch, but as a means to deploy advanced services not otherwise possible.[1159] We find that competing providers without access to AIN would be at a significant disadvantage to

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[1155] Of the three potential points of access to AIN proposed in the *Intelligent Networks* NPRM, LEC commenters generally agree that SMS access poses the least risk of harm to the public switched telephone network. *See* Bell Atlantic comments in CC Docket No. 91-346 at 6-7; BellSouth comments in CC Docket No. 91-346 at 12, 13; GTE comments in CC Docket No. 91-346 at 19, 21; NYNEX comments in CC Docket No. 91-346 at 3; PacTel comments in CC Docket No. 91-346 at 20-21; SBC comments in CC Docket No. 91-346 at 5, 8; U S West comments in CC Docket No. 91-346 at 52; United and Central comments in CC Docket No. 91-346 at 1. Competitors also support such access. *See* MCI Comments at 6; Siemens Comments at 2; TIA Comments at 2.

[1156] *BellSouth Part 69 Waiver Petition.* BellSouth proposes to tariff services that permit third parties to create and administer AIN services through access to the SCE and SMS. Bell South's SCE/SMS service will support third-party service development with the following AIN triggers: off-hook immediate, off-hook delay, public office dialing plan, customized dialing plan, feature code and terminating attempt triggers. *Id.* *See* Bell Atlantic comments in CC Docket No. 91-346 at 6, 8; Ameritech July 17 *Ex Parte*.

[1157] U S West comments at 58 n.124 (for example, BellSouth uses DESIGNedge for such access which utilizes a proprietary database technology tailored to its network); Bell Atlantic comments at 28-29.

[1158] GVNW comments at 30 (incumbent LECs should be able to copyright AIN based services that they create or incumbents will have much less incentive to develop such services).

[1159] AT&T comments at 23-25; Cable & Wireless comments at 24; MCI comments at 18, 33.

incumbent LECs, because they could not necessarily offer the same services to the customer. This access will help competing providers without imposing costs on incumbent LECs because the entrants will pay the cost.[1160] We therefore conclude, under section 251(d)(2)(A), that access to AIN, including those elements that may be proprietary, is necessary for successful entry into the local service market.

498. Most parties generally did not identify proprietary concerns with access to those SMSs used other than for AIN. Some parties, however, argue that there are proprietary interfaces used to enter information into various databases.[1161] Competing carriers counter that competitive providers would not need to have direct access to the proprietary methods of data entry used by incumbent LECs, and as a result we conclude that the unbundled access to SMSs used for other than AIN does not present proprietary concerns with respect to section 251(d)(2)(A).[1162]

499. We also conclude that unbundled access to all SMSs is necessary for a competing provider to effectively use unbundled call-related databases. We find that the inability of competing carriers to use the SMS in the same manner that an incumbent LEC uses to input data itself would impair the ability of a competing carrier to effectively offer services to its customers using unbundled call-related databases. Commenters in the record point out that access to call-related databases alone would not allow the competing carrier to provide such services to its customers without access to an SMS.[1163] We also conclude that AIN-based services are important to a new entrant's ability to compete effectively for customers with the incumbent LEC, and in developing new business by introducing new AIN based services. Thus we conclude that a competitor's ability to provide service would be significantly impaired if it did not have unbundled access to an incumbent LEC's SMS, including access to the SMS(s) used to input data to the LIDB, Toll Free Calling, Number Portability and AIN call-related databases.

500. We reject the contention by several incumbent LECs that signaling and database access was meant by the 1996 Act to apply only to such access as is necessary for call routing and completion. Although the competitive checklist for BOC entry into in-region interLATA services under section 271 requires "nondiscriminatory access to databases and associated

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[1160] *See supra*, Section VII.

[1161] AT&T June 13 *Ex Parte*.

[1162] AT&T comments at 26.

[1163] Ericsson comments at 6.

signaling necessary for call routing and completion"[1164] the definition of a network element is more comprehensive in scope. A network element as defined by the 1996 Act includes "databases" and in particular "databases sufficient for billing and collection or used in the transmission, routing, or *other* provision of a telecommunications service."[1165] We find that the inclusion of "other provision of a telecommunications service" meant Congress intended the unbundling of databases to be read broadly and could include databases beyond those directly used in the transmission or routing of a telecommunications service.

(4) Third Party Call-Related Databases

501. We find that there is not enough evidence in the record to make a determination as to the technical feasibility of interconnection of third party call-related databases to the incumbent LEC's signaling system. Some parties argue that such interconnection, including the interconnection of third party AIN SCP databases, would allow them to provide more efficient or advanced call processing and services to customers, thereby increasing their ability to compete with the incumbent LEC.[1166] AT&T and MCI specifically argue that it would be technically feasible for them to interconnect their AIN SCP database to an incumbent LEC's AIN for the purpose of providing call processing instructions to the incumbent LEC's switch.[1167] Incumbent LECs contend that such interconnection would leave their switch vulnerable to a multitude of potential harms because sufficient mediation for such interconnection does not currently exist at the STP or SCP and has not yet been developed.[1168] AT&T counters that there is no need for additional mediation and that sufficient certification and testing of AIN based services before deployment in such a fashion is technically feasible.[1169]

502. At this time, in view of this record and the record compiled in the *Intelligent Networks* docket, we cannot make a determination of the technical feasibility of such interconnection. We do, however, believe that state commissions could find such an

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[1164] 47 U.S.C. § 271(c)(2)(B)(x).

[1165] 47 U.S.C. § 153(29).

[1166] AT&T comments at 23-25; Cable & Wireless comments at 24; MCI comments at 18, 33.

[1167] AT&T comments at 23-25; MCI comments at 18, 33.

[1168] *See* U S West comments in CC Docket No. 91-346 at 73-74, 84; NYNEX comments in CC Docket No. 91-346 at 14-15; SBC comments in CC Docket No. 91-346 at 8-9.

[1169] *See AT&T Intelligent Networks Proposal* Attachment at 2.

arrangement to be technically feasible and we do not intend to preempt such an order through these rules. The Illinois Commission recently ordered access to incumbent LECs' AIN that does allow for this type of interconnection.[1170] We intend to address this issue early in 1997, either in the IN docket or in a subsequent phase of this proceeding, taking into account, *inter alia*, any relevant decisions of state commissions.[1171]

503. We also address the impact on small incumbent LECs. For example, GVNW asserts that any national rule requiring this form of interconnection would require many small incumbent LECs to make uneconomic upgrades of their switches in order to accommodate it.[1172] We have considered the economic impact of our rules in this section on small incumbent LECs. Accordingly, we have not adopted any national standards concerning AIN at this time. We also note that section 251(f) provides relief for certain small LECs from our regulations implementing section 251.

5. Operation Support Systems

a. Background

504. We sought comment, in the NPRM, on whether national requirements for electronic ordering interfaces would reduce the time and resources required for new entrants to enter and compete in regional markets.[1173] We also sought comment on the unbundling of databases generally in our discussion on unbundling database and signaling systems.[1174]

b. Comments

[1170] *Illinois Wholesale Order*.

[1171] There are other additional outstanding issues from the *Intelligent Networks* proceeding that are not resolved here including direct access to the SCP and national standards for AIN access.

[1172] GVNW comments at 30-31.

[1173] NPRM at para. 89.

[1174] NPRM at paras. 107-114.

505. Several new entrants argue that incumbent LECs should be required to unbundle access to their "operations support systems" and "back-office" databases as network elements.[1175] Parties define operations support systems and back office databases generally to include those systems and databases required for pre-ordering, ordering, provisioning, maintenance and repair, and billing.[1176] Several state commissions report that they have required incumbent LECs to provide access to some of these systems and databases.[1177] Potential competitors argue that, without such access, incumbent LECs can make it extremely difficult for them to utilize unbundled network elements and resold services, thereby severely impairing their ability to compete.[1178] Competitors argue that they should be able to access such incumbent LEC systems as necessary to receive and input data.[1179] Competitors contend that such access is required by sections 251(c)(3) and 251(c)(4) as part of the terms and conditions of each section.[1180] TCC further argues that until such access is in place,

[1175] ACTA comments at 14; ACSI comments at 42-43; ALTS comments at 31; American Network Exchange comments at 5; AT&T comments at 33-39; Cable & Wireless comments at 36-37; Citizens Utilities comments at 15; CompTel comments at 31; GCI comments at 16; MCI comments at 33; TCC comments at 54-60; Teleport comments at 38-39; Vartec comments at 6-10 (incumbent LECs should unbundle access to the Billing Name and Address database); WorldCom June 14 *Ex Parte at 4-5;* CompTel June 14 *Ex Parte*.

[1176] *See* Competition Policy Institute comments at 16; GCI comments at 16; MCI comments at 18; NCTA comments at 42; Sprint comments at 17-18, 41; Teleport comments at 38-39. MCI also identifies several "back office" databases it believes are necessary to provide competitive local telephone service including, among others, Customer Record Information System (CRIS), Master Street Address Guide (MSAG), CMDS System (industry mechanism to exchange billed messages such as third-party, collect and calling cards), Telecommunications Management Network Type Database (TMN), and Number Assignment Database. MCI July 3 *Ex Parte* at 2-4.

[1177] Texas Commission comments at 19 (number assignment, ordering and repairs); In Re Petition of AT&T for the Commission to Establish Resale Rules, Rates, Terms and Conditions and the Initial Unbundling of Services, Georgia Commission Docket 6352, (Georgia Commission May 29, 1996); Order Declaring Resale Prohibitions Void and Establishing Tariff Terms, New York Commission Case 94-C-0095 and Case 95-C-0657 (New York Commission June 25, 1996).

[1178] ACSI comments at 47; AT&T comments at 33-39 (an incumbent LEC's monopoly control over operational support systems is as formidable an obstacle to market entry as its control over the network itself); Cable & Wireless comments at 36-37; Citizens Utilities comments at 15; Continental comments at 19; Sprint comments at 17-19, 22; TCC comments at 54-60 (incumbent LECs can block new entry by refusing to install "automated, nondiscriminatory systems" for ordering, installing, maintaining, repairing and billing); Teleport comments at 38-39; CompTel comments at 37-38 (such access is necessary for competitors to combine unbundled network elements into telecommunications services of their own design); Vartec comments at 7-8 (competitors will be unable to compete unless incumbent LECs provide access to unbundled billing and collection functions).

[1179] *See, e.g.*, ACSI comments at 47; MCI comments at 24.

[1180] TCC comments at 56 (section 251(c)(3) requires that unbundled network elements be provided at nondiscriminatory rates, terms and conditions, and section (c)(4) requires that services for resale be provided free of any "unreasonable or discriminatory conditions or limitations"); CompTel comments at 37 (Commission should set an aggressive, firm deadline for compliance); GCI comments at 16.

incumbent LECs will not have met the requirements of either section 251(c)(3) or (c)(4) and therefore BOCs cannot be deemed to have met the requirements of section 271(c)(2)(B)(i).[1181]

506. In contrast, most incumbent LECs argue that operations support systems do not qualify as network elements under the 1996 Act.[1182] Ameritech argues that competitors have not demonstrated that they need access to such systems in order to provide telecommunications services.[1183] Several incumbent LECs assert that an incumbent LEC may negotiate with a competitor to provide such support services, but that the 1996 Act does not require them to unbundle these systems as network elements.[1184] Other parties argue that such access is not currently technically feasible and should be resolved through the negotiations process.[1185] SBC contends that its provisioning processes are neutral with respect to competing providers of service and that provisioning for competitors does not take longer than provisioning for its own customers.[1186]

507. Several potential local competitors, including most large IXCs, urge the Commission to require incumbent LECs to provide access to their operation support systems through real-time "electronic interfaces" or "electronic bonding."[1187] AT&T argues that virtually every incumbent LEC uses automated interfaces internally to support and coordinate

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[1181] TCC comments at 56-57.

[1182] BellSouth comments at 45; GTE comments at 44; U S West comments at 48; Lincoln Tel. reply at 12-14; Ameritech reply at 19-20 (only for routing, terminating, billing or providing telecommunications service); Bell Atlantic reply at 12-23 n.15 (not necessary to offer service and numerous resellers have operated in Bell Atlantic territory without such direct access); BellSouth reply at 24, n.45; GTE reply at 23; NYNEX reply at 33-34; PacTel reply at 22 (operations support systems not used in the provision of a telecommunications service). Letter from Michael Glover, General Attorney, Bell Atlantic, to William Kennard, General Counsel, FCC, April 15, 1996 (Bell Atlantic April 15 *Ex Parte*).

[1183] Ameritech comments at 19-20; NYNEX comments at 33-34 (administrative databases are not used in routing or completion of calls); Bell Atlantic reply at 14; U S West reply at 27.

[1184] NYNEX comments at 33-34; Ameritech reply at 19-20; Lincoln Tel. reply at 14 (competitors must provide their own ordering systems); Bell Atlantic April 15 *Ex Parte* at 9.

[1185] Lincoln Tel. comments at 9 (re-engineering customer service systems only for purpose of supporting competitors would be extremely profligate); GVNW comments at 10-12.

[1186] Letter from Sandra Wagner, Director, Federal Regulatory, SBC Communications, Inc. to William Caton, Acting Secretary, FCC, June 4, 1996 (SBC June 4 *Ex Parte*).

[1187] ACTA comments at 14-15; AT&T comments at 33-39; MCI comments at 33-34; Sprint comments at viii, 17-19, 22; Teleport comments at 38-39; Texas Commission comments at 19; TCC comments at 56-58 Appendix D; AT&T reply at 20-21.

functionalities such as ordering, provisioning, maintenance, and billing.[1188] TCC argues that the availability of such operational interface standards for external interaction are limited, and that incumbent LECs have powerful disincentives to develop and implement such interfaces in the absence of clear rules requiring them.[1189] Parties commented that such interfaces are necessary so that carriers relying on interconnection, unbundled network elements, or resale from the incumbent LEC can offer their customers services of the same quality as those offered by the incumbent LEC.[1190] AT&T argues that incumbent LECs must provide such access for competitors at the same level of quality and within the same intervals as they do for their own end-users so that customers do not "perceive any differences in the quality of service provided by one carrier as compared to another."[1191] Competitors contend that such interfaces need to be similar to the PIC conversion process, so that it is as easy for consumers to switch local service providers as it is to switch interexchange carriers.[1192] Teleport argues that it would be at a competitive disadvantage if it was required to use slower, more expensive manual systems while the incumbent LEC continued to use its modern and efficient systems.[1193]

508. AT&T and TCC commented on AT&T's experience in the Rochester, New York market as a reseller of Rochester Telephone's services under Rochester Telephone's Open

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[1188] AT&T comments at 36-37.

[1189] TCC comments at 55.

[1190] ACTA comments at 14-15; AT&T comments at 33-39; MCI comments at 33-34; Sprint comments at viii, 17-19, 22; Teleport comments at 38-39; TCC comments at 55 (a competitor must be able to seamlessly deliver services, add features, and bill "as if it owned the facilities").

[1191] AT&T comments at 35. AT&T argues that such a requirement is supported by Commission precedent including *Policy and Rules Concerning the Furnishing of Customer Premises Equipment, Enhanced Services and Cellular Communications Services by the Bell Operating Companies*, Report and Order, 95 F.C.C. 2d 1117, 1135-36 (1983) (adopting safeguards to prevent BOCs from providing superior access, installation, and maintenance services to themselves than to competitive providers of CPE, enhanced services and cellular services); *Amendment of Sections 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry)*, Report and Order, 104 F.C.C. 2d 958, 1026-27 (1986) (requiring BOCs to provide competing enhanced service providers with comparably efficient interconnection "to control potential discrimination" by BOCs in favor of their own offerings); *id.* at 1041 (time periods for installation, maintenance, and repair must be the same for competing carriers as for BOC's own offerings).

[1192] ACTA comments at 16; AT&T comments at 35-36; CompTel comments at 3, 37; TCC comments at 54 (should be as easy for consumers to switch local service providers as it is currently to switch long distance providers). *See* Letter from Mary Brown, Director, Corporate Rates & Federal Regulatory Analysis, MCI, to William Kennard, General Counsel, FCC, Mar. 20, 1996 (*LXCs Joint Ex Parte*) at 6.

[1193] Teleport comments at 39; *accord* TCC comments at 55 (for example, an incumbent LEC could enter its own service orders electronically, but require the competing carrier to submit such orders manually via a multiple page form faxed or e-mailed to the incumbent for subsequent processing).

Market Plan.[1194] Parties noted that AT&T was required to submit a detailed order form, initially through a facsimile machine and later through e-mail, in order to resell Rochester Telephone services.[1195] AT&T asserts that it was signing up between one and two hundred new customers daily and therefore had to fax up to 1400 pages daily to Rochester Telephone.[1196] AT&T and TCC contend that such a manual process is clearly discriminatory and in violation of the 1996 Act because it creates additional delay and the potential for human error, resulting in customer dissatisfaction.[1197] TCC argues further that such a disparity in systems allows for the incumbent LEC to schedule service commencement and issue new phone numbers during the initial contact with a customer, while the competitor, at best, must put the customer on hold while it calls the incumbent LEC to obtain such information.[1198]

509. Several parties argue that electronic interfaces should provide competitors with transparent access to the underlying information rather than the individual databases necessary for ordering and provisioning, installation, maintenance and repair, recording and billing, and monitoring service.[1199] Commenters assert that large incumbent LECs may have, for example, certain information necessary for billing, stored among several databases systems, each with individual operating systems.[1200] AT&T asserts that it will be difficult and expensive for a

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[1194] *See* Petition of Rochester Telephone Corp. for Approval of Proposed Restructuring Plan, Opinion and Order Approving Joint Stipulation and Agreement, Case 93-C-0103, Opinion No. 94-25 (NY Pub. Serv. Comm'n) (Nov.10, 1994); *In the Matter of Rochester Telephone Corp., Petition for Waivers to Implement its Open Market Plan*, 10 FCC Rcd 6776 (1995); *see also* Big Boys Come Calling, N.Y. Times, Oct. 19, 1995 at 1.

[1195] AT&T comments at 34-35 (AT&T had to complete a multi-page form for every individual customer that wanted to switch to AT&T and Rochester Telephone would not change a customer's service until AT&T faxed multiple documents to it); TCC comments at 55.

[1196] AT&T comments at 34 (AT&T estimated that for each customer it ordered services for, it took at least four hours for Rochester to complete and respond to AT&T).

[1197] AT&T comments at 34 (AT&T argues that the problems with a manual process were "intolerable" in the Rochester market, and would be significantly magnified in larger or more heavily populated areas); TCC comments at 55.

[1198] TCC comments at 55-56 (at worst the competing carrier must hang up with the customer and call back later with the necessary information).

[1199] AT&T comments at 33-39; Telecommunications Resellers Ass'n comments at 22 n.52-53; TCC comments at 56 -57 (electronic interface capabilities should allow competitors, *inter alia*, to enter customer trouble reports, obtain report commitments, schedule customer site visits and receive notification of network conditions affecting service); Letter from Antoinette Cook Bush, Counsel, Ameritech to William Caton, Acting Secretary, FCC, July 10, 1996 (Ameritech July 10 *Ex Parte*). Ameritech argues that, once operational interfaces are in place, it will be unnecessary for carriers to provide competitors with direct access to the underlying systems or databases providing such functions. *Id.* at 5.

[1200] AT&T comments at 33-39.

competing carrier to individually access multiple systems and that the difficulty and expense will be compounded for parties wishing to compete in several incumbent LECs' territories.[1201] AT&T contends, therefore, that incumbent LECs should create and deploy a "gateway" to all of their internal operations support systems and databases so that a competing carrier could use one method of access to the underlying information.[1202] U S West contends that competitors must develop systems that are compatible with incumbent LEC electronic interfaces and argues that incumbent LECs should not be required to develop individualized systems for each competing carrier.[1203]

510. Since the passage of the 1996 Act, several states have proceeded to implement rules for local competition, several of which include provisions concerning electronic interfaces.[1204] The Georgia Commission ordered BellSouth to establish electronic operational interfaces by July 15, 1996, and ordered both incumbent BellSouth and requesting carrier AT&T to submit a joint report to the commission within thirty days concerning the implementation schedule necessary to deploy such interfaces.[1205] After a motion for reconsideration, the Georgia Commission provided BellSouth with an additional month to establish these interfaces and added additional deadlines for the deployment and operation of such interfaces.[1206] The Illinois Commission ordered Ameritech and Centel to provide competitors with "all operational interfaces at parity with those provided their own retail

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[1201] *Id.*

[1202] *Id.*

[1203] Letter from Cyndie Eby, Executive Director -- Federal Regulatory, U S West to Robert Tanner, Attorney Advisor, FCC, July 9, 1996 (U S West July 9 *Ex Parte*).

[1204] Letter from Bruce Cox, Government Affairs Director, AT&T to William Caton, Acting Secretary, FCC, July 11, 1996 (AT&T July 11 *Ex Parte*). AT&T submitted orders or rules from eight states that have taken action on the issue of electronic interfaces. *Id.*

[1205] Petition of AT&T for the Commission to Establish Resale Rules, Rates, Terms and Conditions and the Initial Unbundling of Services, Docket No. 6352-U at 11-12, 15 (Georgia Commission May 29, 1996). The Georgia Commission ordered BellSouth to establish interfaces for "pre-service ordering, service ordering and provisioning, directory listing and line information databases, service trouble reporting, and daily usage data." *Id.* at 15.

[1206] Motion for Reconsideration in Docket No. 6352-U (Georgia Commission July 2, 1996). The Georgia Commission directed that most electronic interfaces must be fully operational by the end of 1996, and established March 31, 1997 as an absolute deadline. *Id.*

customers."[1207] The Louisiana Commission has proposed rules on local competition that require incumbent LECs to deploy systems for competitors that are equivalent to those used by incumbents for their own retail exchange services.[1208] Under those rules, such access must be equal to that provided to an incumbent LECs' own personnel.[1209] The California Commission adopted interim rules ordering incumbent LECs to deploy automated on-line systems for access by competitors.[1210] The Indiana Commission concluded that a competitor's ability to utilize "electronic access, technical interfaces, or access to databases to place service orders, receive phone number assignments, receive information necessary to bill [its] customers and to inform the incumbent LEC of cases of trouble" is essential to the development of resale competition.[1211] Indiana ordered incumbent LECs to provide all operational interfaces at parity with those the incumbent provides to its own retail customers.[1212] The Ohio Commission's rules on local competition require all LECs to provide "nondiscriminatory, automated operational support systems" that support access by competing carriers to such functions as pre-ordering, ordering, provisioning, repair and maintenance, number assignment, and billing.[1213] The Oklahoma Commission has proposed rules that require an incumbent LEC, to the extent it provides itself, its affiliates or subsidiaries,

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[1207] *Illinois Wholesale Order*. The Illinois Commission ordered both incumbent LECs, to the extent they could not "fully and immediately" implement operational parity, to submit a plan with specific timetables for achieving compliance. *Id.* at 51.

[1208] Substitute Proposed Regulations for Competition in the Local Telecommunications Market, Docket No. U-20883 (Louisiana Commission March 5, 1996). The Louisiana Commission further requires "direct on-line access" to incumbent LECs' mechanized order entry system, number administration system, trouble reporting and monitoring system, customer usage data, and local listing databases. *Id.*

[1209] *Id.*

[1210] Order Instituting Rulemaking on the Commission's Own Motion into Competition for Local Exchange Service, R. 95-04-043 and I. 95-04-044 (California Commission April 26, 1995). The California Commission ordered such access for "service ordering and implementation scheduling." *Id.* at Appendix E, 14.

[1211] In the Matter of the Investigation on the Commission's Own Motion into Any and All Matters Relating to Local Telephone Exchange Competition Within the State of Indiana, Cause No. 39983, Interim Order on Bundled Resale and Other Issues (Indiana Commission July 1, 1996).

[1212] *Id.* at 49. The Commission also ordered incumbents Ameritech and GTE, to the extent they contend that they are unable to fully and immediately implement operational parity, to submit a comprehensive plan with specific timetables for achieving compliance. *Id.*

[1213] In the Matter of the Commission Investigation Relative to the Establishment of Local Exchange Competition and Other Competitive Issues, Case No. 95-845-TP-COI (Ohio Commission June 12, 1996).

automated interfaces for the purpose of service ordering, maintenance or repair, to make such interfaces available to competitors.[1214]

511. A few incumbent LECs commented on their own efforts to develop and implement electronic interfaces, including development of a single gateway for competing carrier access. Ameritech contends that "operational interfaces are essential to promote viable competitive entry."[1215] Bell Atlantic states that it currently provides ordering and repair information to IXCs and is working on implementing similar electronic interfaces for competing local carriers.[1216] GTE commented that it supports access to its trouble administration information for AT&T and MCI.[1217] U S West also supports trouble administration electronic access for AT&T and MCI and is developing access to all of its operations support systems for IXCs.[1218] U S West also states that it expects to build on such access for IXCs to develop access to meet the needs of local competitors.[1219] NYNEX also provides currently for electronic access for IXCs to its operations support systems for presubscription, ordering and provisioning, trouble administration, and access billing.[1220] NYNEX, which has been ordered by the New York Commission to provide electronic

[1214] All Sources Proposed Rules,Docket No. RM950000019 (Local Telephone Competition) (Oklahoma Commission March 7, 1996). Oklahoma rules clarify that such interfaces should not permit competitors to directly access the incumbent's underlying systems. *Id.* at 79.

[1215] Ameritech July 10 *Ex Parte*.

[1216] Letter from Patricia Koch, Assistant Vice President, Federal External Affairs and Regulatory Relations, Bell Atlantic, to William Caton, Acting Secretary, FCC, June 21, 1996 (Bell Atlantic June 21 *Ex Parte*).

[1217] GTE reply at 23 n.31 (GTE provides electronic bonding for trouble administration to both AT&T and MCI).

[1218] Letter from Cyndie Eby, Executive Director-Federal Regulatory to William Caton, Acting Secretary, FCC, June 28, 1996 (U S West June 28 *Ex Parte*). U S West supports a mediated electronic interface for IXCs to submit trouble reports to U S West. *Id.*

[1219] U S West July 9 *Ex Parte*.

[1220] Letter from Alan Cort, Director, Federal Regulatory Matters, NYNEX to William Caton, Acting Secretary, FCC, July 12, 1996 (NYNEX July 12 *Ex Parte*). Such electronic access can be achieved through "a stand alone PC with a dial up modem, or through a customer's [IXC's] network to allow network to network connectivity." *Id.*

interfaces for local competitors by October 1, 1996,[1221] recently proposed to expand the use of its current electronic access for IXCs to local competitors.[1222]

512. Sprint and MCI argue that current use of electronic interfaces, including the Customer Account Record Exchange (CARE) system used by LECs and IXCs to exchange subscriber account information electronically, is evidence of the technical feasibility of electronic bonding.[1223] TCC urges the Commission to require the provision of timely and accurate CARE by all local service providers to all IXCs.[1224] Vartec asserts that incumbent LECs and IXCs already share access to the Billing Name and Address (BNA) database.[1225] TCC argues that all local service providers should be required to continue to support the standard interface that exists today for IXCs to request BNA information to complete the billing process for its customers.[1226] In addition, TCC notes that competing carriers purchasing unbundled local switching from the incumbent LEC will require access to billing data to bill IXCs for exchange access.[1227]

513. Several commenters advocate national standards for electronic interfaces.[1228] Ameritech asserts that "[t]he ability to do business between multiple local exchange carriers and incumbent LECs dictates that these electronic interfaces adhere to national or industry-based standards where available."[1229] Sprint proposes that the Commission require industry to

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[1221] Order Declaring Resale Prohibitions Void and Establishing Tariff Terms, Case 94-C-0095, *et. al*, (New York Commission June 25, 1996).

[1222] Letter from Alan Cort, Director, Federal Regulatory Matters, NYNEX to William Caton, Acting Secretary, FCC July 17, 1996 (NYNEX July 17 *Ex Parte*). NYNEX will provide competing providers with access to its Direct Customer Access System. It is currently testing local service applications with potential new entrants. *Id.*

[1223] MCI comments at 18; Sprint comments at 17; TCC comments at 58 n.60 (currently there are approximately 56 million CARE transactions annually).

[1224] TCC comments at 58 (CARE information includes a customer's billing telephone number, working telephone number, billing address and service address).

[1225] Vartec comments at 8-9.

[1226] TCC comments at 58-59.

[1227] TCC comments at 59.

[1228] AT&T comments at 36-39; Cable & Wireless comments at 36-37; Teleport comments at 38-39.

[1229] Ameritech July 10 *Ex Parte* at 5.

develop such standards and incumbent LECs to implement those standards within twelve months.[1230] AT&T argues that, while industry has primary responsibility for developing standards, section 256(b)(1) establishes an "oversight" responsibility for the Commission in the development of such industry standards.[1231] American Communications Services argues that such standards should conform to Bellcore and ANSI requirements as well as relevant industry guidelines and manufacturer specifications.[1232] Ameritech asserts that, if an ANSI or other national or industry-based standard exists, incumbent LECs should have a duty to conform their electronic interfaces to those standards within a reasonable period of time.[1233] Sprint reports that industry has been working on developing standards for electronic interfaces in the Electronic Communications Implementation Committee (ECIC),[1234] a working committee in the Telecommunications Industry Forum of the Alliance for Telecommunications Industry Solutions (ATIS).[1235] The ECIC defines electronic bonding as "interactive electronic information exchange involving application-to-application communications between telecommunications jurisdictions" supporting operations, administration, maintenance, and provisioning.[1236] The ECIC has already developed guidelines for a "Trouble Administration" application and is close to completing those for an "Interexchange Carrier/Customer Account

[1230] Sprint comments at 18. *See also* AT&T comments at 38. AT&T urges the Commission to direct industry to work towards developing such standards, set a date for their implementation and make it clear to incumbent LECs that such standards are a necessary part of meeting the requirements of sections 251(c)(3) and (c)(4). *Id.*

[1231] AT&T comments at 38.

[1232] ACSI comments at 47; *see* Ameritech July 10 *Ex Parte* at 5. Ameritech adds that the telecommunications industry has the responsibility to develop its own standards through existing bodies such as ANSI. *Id.*

[1233] Ameritech July 10 *Ex Parte* at 5.

[1234] ECIC was formerly known as the Electronic Bonding Implementation Team (EBIT) before becoming a working committee of ATIS.

[1235] Letter from Jay Keithley, Vice President, Law & External Affairs, Sprint , to William F. Caton, Acting Secretary, FCC, June 25, 1996 (Sprint June 25 *Ex Parte*). Current active members of the ECIC include: Ameritech, AT&T, Bell Atlantic, BellSouth, Cincinnati Bell, DSET, GTE, MCI, NYNEX, Objective Systems Integrators, OpenCon Systems, Pacific Bell, Pirelli Cable, SNET, Southwestern Bell, Sprint, Touch of Gray Engineering, Telegenics, Teleport, and U S West. *Id. See also* Letter from Todd Silbergeld, Director--Federal Regulatory, SBC Communications to William Caton, Acting Secretary, FCC (July 12, 1996) (SBC July 12 *Ex Parte*).

[1236] Sprint June 25 *Ex Parte*.

Record Exchange" application.[1237] A few incumbent LECs identified the "Electronic Data Interchange (EDI)" standard as a potential basis for electronic interfaces.[1238] Several parties also commented that the Ordering and Billing Forum (OBF) is working on developing standards for electronic interfaces.[1239] SBC and NYNEX note that ECIC, OBF, EDI and the T1M1 standards committees[1240] are all working in conjunction to develop electronic interfaces for inter-telecommunications company transactions.[1241]

514. AT&T argues that a national standard for electronic interfaces should provide for a uniform method of access to underlying information by competing carriers to all incumbent LECs. As envisioned by AT&T, such a gateway would provide transparent access for all competing local exchange providers to incumbent LEC administrative and back office databases. Bell Atlantic and AT&T together agree that, given "appropriate guidance from the Commission, the industry can achieve consensus on sufficient data elements and formatting conventions to facilitate that 95% of all inter-telecommunications company transactions may be processed via electronic gateways within twelve months."[1242] Bell Atlantic and AT&T argue that "transaction sets"[1243] to facilitate the exchange of information across electronic

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[1237] Sprint June 25 *Ex Parte*. The ECIC will next work on a "Ordering/Provisioning" application. It has identified but not yet established priorities for other applications including: Performance Monitoring, Alarm Monitoring, Network Management, Traffic Management, Testing and Reporting, Ordering Competitive LEC Services (including Resale), Ordering SONET, Product Availability/Capability, Electronic Bonding for Government and Large Customers, and Intercompany Billing. *Id. See also* U S West July 9 *Ex Parte*.

[1238] Ameritech July 10 *Ex Parte* at 5-6. EDI is defined by the Telecommunications Industry Forum. *Id. at 6.*

[1239] AT&T comments at 38; BellSouth reply at 27; Ameritech July 10 *Ex Parte* at 5. An electronic ordering interface could be based on the "access service request" defined by OBF. Billing information could be exchanged via the "exchange message interface" or the "exchange message record" also defined by OBF. Ameritech July 10 *Ex Parte* at 5-6.

[1240] T1M1 is a standards committee under the T1 Telecommunications committee, and is a part of ATIS.

[1241] SBC July 12 *Ex Parte*; NYNEX July 17 *Ex Parte*.

[1242] Letter from Bruce Cox, Government Affairs Director to William Caton, Acting Secretary, FCC, July 3, 1996 (*AT&T-Bell Atlantic Joint Ex Parte*). This language was also supported by Beechwood Data Systems, a systems integrator company working with, among others, AT&T and NYNEX on electronic interfaces.

[1243] A "transaction set" refers to a set of standard data elements necessary to support any electronic exchange of information for a particular function, like provisioning.

interfaces need to be created to support the functions of pre-ordering and ordering,[1244] provisioning,[1245] repair and maintenance,[1246] and billing.[1247] AT&T commented that electronic interfaces are scalable to different size entities, so that any phone company with at least a PC computer and a modem can utilize one of their applications.[1248]

515. Several state commissions commented that they are not opposed to national standards but want the flexibility to implement additional or different state standards.[1249] The Colorado Commission believes national technical standards are a worthy goal, but they must carefully consider differences in regional and network conditions.[1250] The California Commission, however, contends that incumbent LEC provisioning systems vary considerably by company and region.[1251] Incumbent LECs argue that there should be no national standards for the provision, maintenance and repair of network elements because operating and administrative systems differ between incumbent LECs.[1252]

[1244] Pre-ordering and ordering includes the exchange of information between LECs about current or proposed customer products and services or unbundled network elements or some combination thereof. *AT&T-Bell Atlantic Joint Ex Parte*. TCC includes such information as customer data on current services, and credit and payment history. TCC comments at 57 n.58, Appendix D.

[1245] Provisioning involves the exchange of information between LECs where one executes a request for a set of products and services or unbundled network elements or combination thereof from the other with attendant acknowledgements and status reports. *AT&T-Bell Atlantic Joint Ex Parte*.

[1246] Maintenance [and repair] involves the exchange of information between LECs where one initiates a request for repair of existing products and services or unbundled network elements or combination thereof from the other with attendant acknowledgements and status reports. *AT&T-Bell Atlantic Joint Ex Parte*.

[1247] Billing involves the provision of appropriate usage data by one LEC to another to facilitate customer billing with attendant acknowledgements and status reports. It also involves the exchange of information between LECs to process claims and adjustments. *AT&T-Bell Atlantic Joint Ex Parte*.

[1248] Letter from Bruce Cox, Government Affairs Director, AT&T to William Caton, Acting Secretary, FCC, July 1, 1996 (AT&T July 1 *Ex Parte*).

[1249] Pennsylvania Commission comments at 25; *but see* California Commission comments at 26-28 (standards could hinder innovation and efficiency).

[1250] Colorado Commission comments at 24-25, 27.

[1251] California Commission comments at 27 (the two biggest incumbent LECs in California have significant differences in how they provision and operate their network).

[1252] Bell Atlantic comments at 31; PacTel comments at 40-44 (Commission could order standards for similarly situated networks but there will be many differences between incumbent LECs' ordering and billing systems); NYNEX reply comments at 32-33 (arguing that there are also differences in incumbent LECs' test equipment).

c. Discussion

516. We conclude that operations support systems and the information they contain fall squarely within the definition of "network element" and must be unbundled upon request under section 251(c)(3), as discussed below. Congress included in the definition of "network element" the terms "databases" and "information sufficient for billing and collection or used in the transmission, routing, *or other provision* of a telecommunications service."[1253] We believe that the inclusion of these terms in the definition of "network element" is a recognition that the massive operations support systems employed by incumbent LECs, and the information such systems maintain and update to administer telecommunications networks and services, represent a significant potential barrier to entry. It is these systems that determine, in large part, the speed and efficiency with which incumbent LECs can market, order, provision, and maintain telecommunications services and facilities. Thus, we agree with Ameritech that "[o]perational interfaces are essential to promote viable competitive entry."[1254]

517. Nondiscriminatory access to operations support systems functions can be viewed in at least three ways. First, operations support systems themselves can be characterized as "databases" or "facilit[ies] . . . used in the provision of a telecommunications service," and the functions performed by such systems can be characterized as "features, functions, and capabilities that are provided by means of such facilit[ies]."[1255] Second, the information contained in, and processed by operations support systems can be classified as "information sufficient for billing and collection or used in the transmission, routing, or other provision of a telecommunications service."[1256] Third, nondiscriminatory access to the functions of operations support systems, which would include access to the information they contain, could be viewed as a "term or condition" of unbundling other network elements under section 251(c)(3), or resale under section 251(c)(4). Thus, we conclude that, under any of these interpretations, operations support systems functions are subject to the nondiscriminatory access duty imposed by section 251(c)(3), and the duty imposed by section 251(c)(4) to provide resale services under just, reasonable, and nondiscriminatory terms and conditions.

518. Much of the information maintained by these systems is critical to the ability of other carriers to compete with incumbent LECs using unbundled network elements or resold services. Without access to review, *inter alia*, available telephone numbers, service interval

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[1253] 47 U.S.C. § 153(29) (emphasis added).

[1254] Ameritech July 10 *Ex Parte* at 5.

[1255] 47 U.S.C. § 153(29).

[1256] *Id.*

information, and maintenance histories, competing carriers would operate at a significant disadvantage with respect to the incumbent. Other information, such as the facilities and services assigned to a particular customer, is necessary to a competing carrier's ability to provision and offer competing services to incumbent LEC customers.[1257] Finally, if competing carriers are unable to perform the functions of pre-ordering, ordering, provisioning, maintenance and repair, and billing for network elements and resale services in substantially the same time and manner that an incumbent can for itself, competing carriers will be severely disadvantaged, if not precluded altogether, from fairly competing. Thus providing nondiscriminatory access to these support systems functions, which would include access to the information such systems contain, is vital to creating opportunities for meaningful competition.

519. As noted in the comments above, several state commissions have ordered real-time access or have ongoing proceedings working to develop and implement it within their jurisdictions. The New York Commission, building on its pioneering experience with the Rochester Telephone "Open Market Plan," has facilitated a working group on electronic interfaces comprised of both incumbent LECs and potential competitors.[1258] The New York Commission focused on these issues in response to the frustrations and concerns of resellers in the Rochester market.[1259] In particular, AT&T alleged that it was "severely disadvantaged due to the fact that [Rochester Telephone] has failed to provide procedures for resellers to access [their] databases for on-line queries needed to perform basic service functions [such] as scheduling customer appointments."[1260] The New York Commission has concluded that wherever possible NYNEX will provide new entrants with real-time electronic access to its systems.[1261] As another example, the Georgia Commission recently ordered BellSouth to provide electronic interfaces such that resellers have the same access to operations support systems and informational databases as BellSouth does, including interfaces for pre-ordering,

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[1257] For these reasons, it is most important that incumbent LECs, which currently own the overwhelming majority of local facilities in any market, provide this information to those new entrants who initially will rely to varying degrees on incumbent LEC facilities. *See e.g.*, AT&T comments at 33-34.

[1258] Order Declaring Resale Prohibitions Void and Establishing Tariff Terms, Case 94-C-0095, *et. al.* (New York Commission June 25, 1996).

[1259] Order Declaring Resale Prohibitions Void and Establishing Tariff Terms, Case 94-C-0095, *et. al.* (New York Commission June 25, 1996). In New York proceeding, resellers argued that interfaces were as important to competition as the level of the wholesale discount. *Id.*

[1260] AT&T Communications of New York, Inc. Complaint, Petition for Declaratory Judgement and for Reconsideration of Opinion No. 94-25 New York Commission, page 12.

[1261] *Id.* at 13-14. The New York Commission operations working group has focused on five areas for implementation: (1) service ordering, (2) trouble administration, (3) credit and collection, (4) billing and usage detail, (5) local exchange company requirements. *Id.* at 13-17.

ordering and provisioning, service trouble reporting, and customer daily usage.[1262] In testimony before the Georgia Commission, a BellSouth witness acknowledged that "[n]o one is happy, believe me, with a system that is not fully electronic."[1263] As noted above, Georgia ordered BellSouth to establish these interfaces within two months of its order (by July 15, 1996), but recently extended the deadline an additional month (to August 15th).[1264] Both the Illinois and Indiana Commissions ordered incumbent LECs immediately to provide to competitors access to operational interfaces at parity with those provided to their own retail customers, or submit plans with specific timetables for achieving such access.[1265] Several other states have passed laws or adopted rules ordering incumbent LECs to provide interfaces for access equal to that the incumbent provides itself.[1266] We recognize the lead taken by these states and others, and we generally rely upon their conclusions in this Order.

520. We conclude that providing nondiscriminatory access to operations support systems functions is technically feasible. Incumbent LECs today provide IXCs with different types of electronic ordering or trouble interfaces that demonstrate the feasibility of such access, and perhaps also provide a basis for adapting such interfaces for use between local service providers.[1267] Further, as discussed above, several incumbent LECs, including NYNEX and Bell Atlantic, are already testing and operating interfaces that support limited functions, and are developing the interfaces to support access to the remaining functions identified by most potential competitors.[1268] Some incumbent LECs acknowledge that

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[1262] *See* In Re Petition of AT&T for the Commission to Establish Resale Rules, Rates, Terms and Conditions and the Initial Unbundling of Services, Docket 6352, (Georgia Commission May 29, 1996).

[1263] *Id.*

[1264] Motion for Reconsideration in Docket No. 6352-U (Georgia Commission July 2, 1996).

[1265] In the Matter of the Investigation on the Commission's Own Motion into Any and All Matters Relating to Local Telephone Exchange Competition Within the State of Indiana, Cause No. 39983, Interim Order on Bundled Resale and Other Issues (Indiana Commissions July 1, 1996); *Illinois Wholesale Order*.

[1266] *See e.g.*, Texas Commission comments at 19; In the Matter of the Commission Investigation Relative to the Establishment of Local Exchange Competition and Other Competitive Issues, Case No. 95-845-TP-COI (Ohio Commission June 12, 1996); Order Instituting Rulemaking on the Commission's Own Motion into Competition for Local Exchange Service, R. 95-04-043 and I. 95-04-044 (California Commission April 26, 1995).

[1267] *See, e.g.*, Bell Atlantic June 21 *Ex Parte*; NYNEX July 12 *Ex Parte*; NYNEX July 17 *Ex Parte*; U S West June 28 *Ex Parte*; U S West July 9 *Ex Parte*.

[1268] Bell Atlantic June 21 *Ex Parte*; NYNEX July 17 *Ex Parte*.

nondiscriminatory access to operations support systems functions is technically feasible.[1269] Finally, several industry groups are actively establishing standards for inter-telecommunications company transactions.[1270]

521. Section 251(d)(2)(A) requires the Commission to consider whether "access to such network elements as are proprietary in nature is necessary."[1271] Incumbent LECs argue that there are proprietary interfaces used to access these databases and information. Parties seeking to compete with incumbent LECs counter that access to such databases and information is vitally important to the ability to broadly compete with the incumbent. As discussed above, competitors also argue that such access is necessary to order, provision, and maintain unbundled network elements and resold services, and to market competing services effectively to an incumbent LEC's customers. We find that it is absolutely necessary for competitive carriers to have access to operations support systems functions in order to successfully enter the local service market.

522. Section 251(d)(2)(B) requires the Commission to consider whether "the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[1272] As mentioned above, parties identified access to operations support systems functions as critical to the provision of local service. We find that such operations support systems functions are essential to the ability of competitors to provide services in a fully competitive local service market. Therefore, we conclude that competitors' ability to provide service successfully would be significantly impaired if they did not have access to incumbent LECs' operations support systems functions.

523. We thus conclude that an incumbent LEC must provide nondiscriminatory access to their operations support systems functions for pre-ordering, ordering, provisioning, maintenance and repair, and billing available to the LEC itself.[1273] Such nondiscriminatory

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[1269] *See* NYNEX reply at 33-34; GTE reply at 23 n.28; Bell Atlantic reply at 14.

[1270] Industry standards committees include ECIC, EDI, OBF and T1M1. *See* Ameritech July 10 *Ex Parte*, Sprint June 25 *Ex Parte*, NYNEX July 17 *Ex Parte*.

[1271] 47 U.S.C. § 251(d)(2)(A).

[1272] 47 U.S.C. § 251(d)(2)(B).

[1273] We adopt the definition of these terms as set forth in the *AT&T-Bell Atlantic Joint Ex Parte* as the minimum necessary for our requirements. We note, however, that individual incumbent LEC's operations support systems may not clearly mirror these definitions. Nevertheless, incumbent LECs must provide nondiscriminatory access to the full range of functions within pre-ordering, ordering, provisioning, maintenance and repair and billing enjoyed by the incumbent LEC.

access necessarily includes access to the functionality of any internal gateway systems[1274] the incumbent employs in performing the above functions for its own customers. For example, to the extent that customer service representatives of the incumbent have access to available telephone numbers or service interval information during customer contacts, the incumbent must provide the same access to competing providers. Obviously, an incumbent that provisions network resources electronically does not discharge its obligation under section 251(c)(3) by offering competing providers access that involves human intervention, such as facsimile-based ordering.[1275]

524. We recognize that, although technically feasible, providing nondiscriminatory access to operations support systems functions may require some modifications to existing systems necessary to accommodate such access by competing providers.[1276] Although, as discussed above, many incumbent LECs are actively developing these systems, even the largest and most advanced incumbent LECs have not completed interfaces that provide such access to all of their support systems functions. State commissions such as Georgia, Illinois, and Indiana, however, have ordered that such access be made available to requesting carriers in the near term. As a practical matter, the interfaces developed by incumbents to accommodate nondiscriminatory access will likely provide such access for services and elements beyond a particular state's boundaries, and thus we believe that requirements for such access by a small number of states representing a cross-section of the country will quickly lead to incumbents providing access in all regions.

525. In all cases, however, we conclude that in order to comply fully with section 251(c)(3) an incumbent LEC must provide, upon request, nondiscriminatory access to operations support systems functions for pre-ordering, ordering, provisioning, maintenance and repair, and billing of unbundled network elements under section 251(c)(3) and resold services under section 251(c)(4). Incumbent LECs that currently do not comply with this requirement of section 251(c)(3) must do so as expeditiously as possible, but in any event no later than January 1, 1997.[1277] We believe that the record demonstrates that incumbent LECs and several national standards-setting organizations have made significant progress in developing

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[1274] A gateway system refers to any electronic interface the incumbent LEC has created for its own use in accessing support systems for providing pre-ordering, ordering, provisioning, repair and maintenance, and billing.

[1275] Such access was all that Rochester Telephone provided to AT&T, when AT&T attempted to compete as a reseller of Rochester Telephone service. *See* Letter from Bruce Cox, Government Affairs Director, AT&T to William Caton, Acting Secretary, FCC, July 10, 1996 (AT&T July 10 *Ex Parte*).

[1276] *See supra*, Section V.G. regarding accommodation of unbundling.

[1277] *See infra*, Section VII.B. for a discussion of exemptions and suspensions for small and rural incumbent LECs.

such access. This progress is also reflected in a number of states requiring competitor access to these transactional functions in the near term. Thus, we believe that it is reasonable to expect that by January 1, 1997, new entrants will be able to compete for end user customers by obtaining nondiscriminatory access to operations support systems functions.

526. We have considered the economic impact of our rules in this section on small incumbent LECs. For example, RTC urges us to recognize the differences between carriers in regards to computerized network administration and operational interfaces. Our requirement of nondiscriminatory access to operations support systems recognizes that different incumbent LECs possess different existing systems. We also note, however, that section 251(f) of the 1996 Act provides relief for certain small LECs from our regulations implementing section 251.

527. Ideally, each incumbent LEC would provide access to support systems through a nationally standardized gateway. Such national standards would eliminate the need for new entrants to develop multiple interface systems, one for each incumbent. We believe that the progress made by standards-setting organizations to date evidences a strong national movement toward such a uniform standard.[1278] For example, both AT&T and Bell Atlantic agree that, given appropriate guidance from the Commission, the industry can achieve consensus on national standards such that within 12 months 95% of all inter-telecommunications company transactions may be processed via nationally standardized electronic gateways.[1279]

528. In order to ensure continued progress in establishing national standards, we propose to monitor closely the progress of industry organizations as they implement the rules adopted in this proceeding. Depending upon the progress made, we will make a determination in the near future as to whether our obligations under the 1996 Act require us to issue a separate notice of proposed rulemaking or take other action to guide industry efforts at arriving at appropriate national standards for access to operations support systems.

6. Other Network Elements

a. Background

529. In the NPRM, we requested comment on other network elements the Commission should require incumbent LECs to unbundle. We tentatively concluded that

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[1278] *See* Sprint June 25 *Ex Parte*; AT&T comments at 38; BellSouth reply at 27.

[1279] *AT&T-Bell Atlantic Joint Ex Parte.*

"subscriber numbers" and "operator call completion services" should be unbundled.[1280] We also, under our discussion of section 251(b)(3), sought comment on nondiscriminatory access to telephone numbers, operator services, and directory assistance.[1281]

b. Comments

530. Many parties support the Commission's tentative conclusion that incumbent LECs should be required to unbundle "operator call completion services" as a separate network element.[1282] AT&T argues that such a network element would be more correctly described as the "operator systems" used to provide these services.[1283] Some state commissions have proposed or required unbundling of operator services because they are critical to new entrants' ability to enter the local exchange market.[1284] Several incumbent LECs, however, argue that they should not be required to unbundle operator services as a network element, because both alternative providers and incumbent LECs provide them on a nondiscriminatory basis.[1285] Some incumbent LECs also advance the argument that Congress did not intend for operator services to be treated as a network element, instead requiring

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[1280] NPRM at para. 116.

[1281] NPRM at paras. 214-217.

[1282] ACSI comments at 44; ALTS comments at 32 (competitors must have nondiscriminatory access to busy line verification and call interrupt as these functionalities are currently only available from the incumbent LEC); AT&T comments at 26; Continental comments at 19; MCI comments at 18-20; Cable & Wireless comments at 20; Citizens Utilities comments at 15; Colorado Commission comments at 24; Comcast comments at 20; Competition Policy Institute comments at 16; DOJ comments at 21; Frontier comments at 17 n.32; GCI comments at 12; Telecommunications Resellers Ass'n comments at 36; TIA comments at 13 (special toll, public telephone and other calls requiring operator assistance); Wyoming Commission comments at 21; Jones Intercable reply at 30.

[1283] AT&T comments at 26 n.32; *see also* Competition Policy Institute comments at 16 (defined operator services as the live or mechanized systems which provide customers with operator services, such as call intercept, directory assistance and call completion); Jones Intercable reply at 30 n.51.

[1284] Wyoming comments at 22; *Illinois Wholesale Order*; AT&T reply 20-21 n.34. *See* Letter from Daniel Brenner, Vice President for Law & Regulatory Policy, NCTA, to Regina Keeney, Chief, Common Carrier Bureau, FCC, April 15, 1996 (NCTA April 15 *Ex Parte*).

[1285] Bell Atlantic comments at 30 (operator services is a competitive market with over 145 operator services providers in the United States); GTE comments at 44; USTA comments at 17 (incumbent LECs already provide operator services on a contract or tariff basis); U S West comments at 46 n.103.

BOCs to provide nondiscriminatory access to such services as one of the conditions for BOC entry into in-region interLATA services under section 271.[1286]

531. Commenters advance different proposals as to how to unbundle access to operator call completion services. Some competitors advocate defining the entire service as a network element so that a competitor could provide its own operator services by interconnecting at the incumbent LEC's switch.[1287] AT&T argues that such services are not necessary for competitors that have their own comparable systems.[1288] Some competitors argue that incumbent LECs must make subscriber name and number and billing and collection services available so that a competitor can provide call completion and directory assistance with its own operators.[1289] Other parties, mostly incumbent LECs, state that such a proposal is not technically feasible.[1290] MCI further states that it needs access to incumbent LEC subscriber number information for the provision of directory assistance and call completion services by its own operator systems.[1291] Other competitors want the incumbent LEC to provide them with unbranded operator call completion services,[1292] much as some of the larger incumbent LECs and IXCs do now for smaller carriers.[1293]

[1286] Ameritech reply at 12 n.15; Bell Atlantic comments at 30; Cincinnati Bell comments at 19 (arguing that unbundling of operator services would impose large costs on smaller incumbent LECs); GTE comments at 44 (section 271 requires nondiscriminatory access to call completion services, not unbundled access to the relevant databases); PacTel reply at 21; SBC comments at 83-84; USTA reply at 17-18.

[1287] MCI comments at 37; AT&T reply at 21 (incumbent LECs must unbundle operator systems so that a competitor providing its own does not have to pay for the incumbent LECs' services).

[1288] AT&T comments at 26.

[1289] ACSI comments at 44.

[1290] *See* SBC reply at 22-23.

[1291] MCI comments at 37.

[1292] Unbranded or rebranded operator services involve the provision of such services by the incumbent LEC for the requesting carrier either: (1) without any identification to the customer that it is the incumbent LEC actually providing such services; or (2) in a manner that the incumbent LEC identifies itself to the customer solely as the requesting carrier for the provision of these services.

[1293] ACSI comments at 47-48; AT&T comments at 26; GCI comments at 12.

532. Many commenters argue that directory assistance and the databases used to provide such services should be separately unbundled as a network element.[1294] Some commenters advocate requiring incumbent LECs to provide unbranded directory assistance as a network element.[1295] MCI notes that Pacific Bell operates a joint directory assistance database for itself and GTE, and argues that competing carriers should be able to participate in a similar type arrangement with incumbent LECs.[1296]

533. Some commenters argue that access to "subscriber numbers" should be unbundled and that access to the Number Assignment database should be unbundled.[1297] MCI advocates that the Commission require incumbent LECs to provide unbundled access to their subscriber number information sufficient for the provision of directory assistance and call completion service by competing carriers using their own operators.[1298] Other parties argue that such access should not be required.[1299]

c. Discussion

(1) Operator Services and Directory Assistance

534. We conclude that incumbent LECs are under the same duty to permit competing carriers nondiscriminatory access to operator services and directory assistance facilities as all LECs are under section 251(b)(3).[1300] We further conclude that, if a carrier requests an incumbent LEC to unbundle the facilities and functionalities providing operator services and directory assistance as separate network elements, the incumbent LEC must provide the

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[1294] NCTA comments at 42; Teleport comments at 37; GST comments at 25; GCI comments at 12; MCI comments at 37 (MCI further recognizes directory assistance and directory listings).

[1295] Comcast comments at 20; Citizens Utilities comments at 15.

[1296] MCI comments at 33, 38 (California Commission ruling adopting this requirement is published at *Re GTE California Incorporated*, 31 CPUC 2d, 370 (1989)).

[1297] MCI comments at 19-20; ACSI comments at 43.

[1298] MCI comments at 37.

[1299] GTE comments at 43 (to the extent "subscriber numbers" means number administration, nondiscriminatory access is assured by industry guidelines and the Commission's intent to establish a number administration entity); Cincinnati Bell comments at 19 (subscriber numbers and information sufficient for billing and collection should be addressed in the bona fide request process).

[1300] *See NPRM* at paras. 203-219.

competing provider with nondiscriminatory access to such facilities and functionalities at any technically feasible point. We believe that these facilities and functionalities are important to facilitate competition in the local exchange market. Further, the 1996 Act imposes upon BOCs, as a condition of entry into in-region interLATA services the duty to provide nondiscriminatory access to directory assistance services and operator call completion services.[1301] We therefore conclude that unbundling facilities and functionalities providing operator services and directory assistance is consistent with the intent of Congress.

535. As discussed in our section on nondiscriminatory access under section 251(b)(3),[1302] the provision of nondiscriminatory access to operator services and directory assistance must conform to the requirements of section 222, which restricts carrier's use of CPNI.[1303] In particular, access to directory assistance and underlying directory information does not require incumbent LECs to provide access to unlisted or unpublished telephone numbers, or other information that the incumbent LEC's customer has requested the LEC not to make available. In conforming to section 222, we anticipate that incumbent LECs will provide such access in a manner that will protect against the inadvertent release of unlisted customer names and numbers.

536. We note that several competitors advocate unbundling the facilities and functionalities providing operator services and directory assistance from particular resold services or the unbundled local switching element, so that a competing provider can provide these services to its customers supported by its own systems rather than those of the incumbent LEC.[1304] Some incumbent LECs argue that such unbundling, however, is not technically feasible because of their inability to route individual end user calls to multiple systems.[1305] We find that unbundling both the facilities and functionalities providing operator services and directory assistance as separate network elements will be beneficial to competition and will aid the ability of competing providers to differentiate their service from the incumbent LECs. We also note that the Illinois Commission has recently ordered such

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[1301] 47 U.S.C. § 271(c)(2)(B)(vii)(II)-(III).

[1302] *See NPRM* at paras. 203-219.

[1303] *See Implementation of the Telecommunications Act of 1996: Telecommunications Carriers' Use of Customer Proprietary Network Information and other Customer Information*, CC Docket No. 96-115, Notice of Proposed Rulemaking, FCC 96-221 (rel. May 17, 1996).

[1304] *See, e.g.*, AT&T comments at 26; Cable & Wireless comments at 20; Colorado Commission comments at 24; DOJ comments at 21; Frontier comments at 17 n.32; MCI comments at 18-20; Jones Intercable reply at 30.

[1305] SBC reply at 22-23.

access.[1306] We therefore find that incumbent LECs must unbundle the facilities and functionalities providing operator services and directory assistance from resold services and other unbundled network elements to the extent technically feasible. As discussed above in our section on unbundled switching, we require incumbent LECs, to the extent technically feasible, to provide customized routing, which would include such routing to a competitor's operator services or directory assistance platform.[1307]

537. We also note that some competitors seek access to operator services and directory assistance in order to serve their own customers.[1308] Some of these parties argue that nondiscriminatory access to such network elements requires incumbent LECs to provide rebranded operator call completion services and directory assistance to the competing carrier's customers.[1309] Incumbent LECs argue that the provision of these services on an unbranded or rebranded basis is not technically feasible because of their inability at the operator services or directory assistance platforms to identify the carrier serving the end user.[1310] As we concluded in our discussion on section 251(b)(3), we find that incumbent LECs must permit nondiscriminatory access to both operator services and directory assistance in the same manner required of all LECs.[1311] We make no finding on the technical feasibility of providing branded or unbranded service to competitors based on the record before us. We note, however, that the Illinois Commission has ordered incumbent LECs to provide rebranded operator call completion services and directory assistance to requesting competitive carriers.[1312]

538. As discussed above, incumbent LECs must provide access to databases as unbundled network elements.[1313] We find that the databases used in the provision of both operator call completion services and directory assistance must be unbundled by incumbent

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[1306] *See Illinois Wholesale Order.*

[1307] *See infra*, Section V.I.2.

[1308] AT&T comments at 26.

[1309] ACSI comments at 47-48; AT&T comments at 26; Comcast comments at 20; GCI comments at 12.

[1310] SBC reply at 22-23.

[1311] *See NPRM* at paras. 203-219.

[1312] *See Illinois Wholesale Order.*

[1313] *See supra*, Section V.J.

LECs upon a request for access by a competing provider. In particular, the directory assistance database must be unbundled for access by requesting carriers.[1314] Such access must include both entry of the requesting carrier's customer information into the database, and the ability to read such a database, so as to enable requesting carriers to provide operator services and directory assistance concerning incumbent LEC customer information. We clarify, however, that the entry of a competitor's customer information into an incumbent LEC's directory assistance database can be mediated by the incumbent LEC to prevent unauthorized use of the database. We find that the arrangement ordered by the California Commission concerning the shared use of such a database by Pacific Bell and GTE is one possible method of providing such access.[1315]

539. Section 251(d)(2)(A) requires the Commission to consider whether "access to such network elements as are proprietary in nature is necessary."[1316] Parties generally did not identify proprietary concerns with unbundling access to operator call completion services or directory assistance. Incumbent LECs generally did not claim a proprietary interest in their directory assistance databases. Many parties contend that proprietary interests leading to restrictions on use or sharing of such database information would injure their ability to compete effectively for local service.[1317] For the reasons described below, we find that access to the systems supporting both operator call completion services and directory assistance is necessary for new entrants to provide competing local exchange service.

540. Section 251(d)(2)(B) requires the Commission to consider whether "the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[1318] Parties identified access to operator call completion services and directory assistance as critical to the provision of local service.[1319] Therefore we conclude that competitors' ability to provide service would be significantly impaired if they did not have access to incumbent LECs' operator call completion services and directory assistance.

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[4] We find the joint directory assistance database used by Pacific Bell and GTE to be one method of such cess. MCI comments at 38.

See Re GTE California Incorporated, 31 CPUC 2d 370 (1989).

47 U.S.C. § 251(d)(2)(A).

MCI comments at 37-38.

7 U.S.C. § 251(d)(2)(B).

ICI comments at 37-38.

(2) Subscriber Numbers

541. Some commenters argue that the Commission should require incumbent LECs to unbundle access to subscriber numbers. We conclude that no Commission action under section 251(b)(3) is required at this time to ensure nondiscriminatory access to subscriber numbers. Issues regarding access to subscriber numbers will be addressed by our implementation of section 251(e).[1320]

[1320] *See Number Portability Order.*

VI. METHODS OF OBTAINING INTERCONNECTION AND ACCESS TO UNBUNDLED ELEMENTS

542. In this section, we address the means of achieving interconnection and access to unbundled network elements that incumbent LECs are required to make available to requesting carriers.

A. Overview

1. Background

543. Section 251(c)(2) requires incumbent LECs to provide interconnection with the LEC's network "for the facilities and equipment of any requesting telecommunications carrier."[1321] Section 251(c)(6) imposes upon incumbent LECs "the duty to provide . . . for physical collocation of equipment necessary for interconnection or access to unbundled network elements at the premises of the [LEC], except that the carrier may provide for virtual collocation if the [LEC] demonstrates to the State commission that physical collocation is not practical for technical reasons or because of space limitations."[1322] In the NPRM, we noted that section 251(c)(6) does not expressly limit the Commission's authority under section 251(c)(2) to establish rules requiring incumbent LECs to make available a variety of methods of interconnection, except in situations where the incumbent can demonstrate to the state commission that physical collocation is not practical for technical reasons or space limitations. We tentatively concluded that the Commission has the authority to require any reasonable method of interconnection, including physical collocation, virtual collocation, and meet point interconnection arrangements.[1323]

[1321] 47 U.S.C. § 251(c)(2).

[1322] 47 U.S.C. § 251(c)(6).

[1323] NPRM at para. 64. Under the Commission's *Expanded Interconnection* rules, LECs are not required to offer a collocating carrier a choice between physical and virtual collocation. *Special Access Order*, 7 FCC Rcd at 7407; *Switched Transport Order*, 8 FCC Rcd at 7404; *see also Physical Collocation Designation Order*, 8 FCC Rcd 4589 (under our *Expanded Interconnection* rules, LECs must provide virtual collocation where: virtual collocation is available on an intrastate basis; a LEC has negotiated an interstate virtual collocation arrangement; LECs are exempted from providing physical collocation because of space constraints; or a state commission has granted a waiver). Also, *see* Section VI.B.1.b. regarding the definitions of physical and virtual collocation.

2. Comments

544. Many parties agree with our tentative conclusion that we have the authority to require any reasonable method of interconnection.[1324] The Illinois Commission states that the purpose of 251(c)(6) is to eliminate any question about the Commission's authority to require physical collocation, and not to limit the type of interconnection incumbent LECs are required to provide under 251(c)(2).[1325]

545. CAPs and IXCs argue that incumbent LECs should be required to offer competitive entrants the choice between physical and virtual collocation, regardless of whether it is practical to offer physical collocation at a particular LEC premises.[1326] Consumer Federation of America and the Consumers Union argue that the Commission can and should order physical and virtual collocation.[1327] MCI contends that interconnectors have the right to choose virtual or physical collocation, or both, and should have the right to switch from one arrangement to another while paying only the actual costs of such a change.[1328] Sprint argues that the authority to require physical collocation necessarily includes the authority to require less invasive forms of collocation, such as virtual.[1329] Hyperion contends that small carriers lack the financial resources to make the economic investment necessary for physical collocation at every end office. Hyperion suggests that permitting new entrants to request virtual or physical collocation, depending upon their requirements would encourage

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[1324] *See, e.g.*, MFS comments at 17-18 (if Congress meant that 251(c)(6) collocation was the exclusive means of obtaining interconnection or access to unbundled elements, then subsections (c)(2) and (c)(3) would not have been required); Teleport comments at 26; Citizens Utilities comments at 11; Illinois Commission comments at 33; Pennsylvania Commission comments at 22; Sprint reply at 21.

[1325] Illinois Commission comments at 33; MFS comments at 18 (no inference can be drawn that Congress intended any limitation on the Commission's authority to require forms of interconnection other than physical collocation, especially in light of section 251(i)).

[1326] *See, e.g.*, AT&T comments at 41; Hyperion comments at 14; MFS comments at 23.

[1327] CFA/CU comments at 14.

[1328] MCI comments at 56.

[1329] Sprint Comments at 19.

competition.[1330] ACTA asserts that the cost of converting existing virtual collocation arrangements to physical should be borne by the incumbent LEC.[1331]

546. Several parties urge the Commission to require interconnection at "meet points."[1332] Teleport states that incumbent LECs currently provide meet point interconnection arrangements between one another's facilities and are thus obligated to provide such arrangements to others.[1333] Teleport also claims that requiring meet point arrangements would be pro-competitive because it would allow competitors the flexibility to construct more efficient networks by eliminating the need to match the incumbent LEC's network.[1334]

547. Incumbent LECs respond that the statute does not give the Commission authority to require virtual collocation in addition to physical collocation.[1335] Ameritech argues that Congress specifically addressed collocation in section 251(c)(6), and that it would be inappropriate to mandate virtual collocation pursuant to the general duty under section 251(c)(2) to provide interconnection. It contends that, under principles of statutory construction, the specific language of section 251(c)(6), which provides for virtual collocation only where physical collocation is not practical, should govern the general language of section 251(c)(2).[1336]

548. GTE claims that section 251(c)(2) does not provide for any Commission role in specifying acceptable forms of interconnection.[1337] Bell Atlantic and BellSouth claim that meet point interconnection arrangements are very complex and should not be mandated by the

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[1330] Hyperion comments at 15.

[1331] ACTA comments at 16.

[1332] A meet point is a point, designated by two carriers, at which one carrier's responsibility for service begins and the other carrier's responsibility ends.

[1333] Teleport reply at 25; Sprint reply 21-22 (argues for a "mid-span" meet arrangement whereby two carriers' fiber optic cables would be spliced together at a point between two repeaters).

[1334] Teleport reply at 25.

[1335] *See, e.g.*, Bell Atlantic comments at 34; PacTel comments at 36.

[1336] Ameritech comments at 24.

[1337] GTE comments at 22.

Commission or the states, but rather left to the negotiation process.[1338] PacTel argues that incumbent LECs should not be required to develop new network capabilities or expand current network facilities to interconnect with competitors.[1339]

3. Discussion

549. We conclude that, under sections 251(c)(2) and 251(c)(3), any requesting carrier may choose any method of technically feasible interconnection or access to unbundled elements at a particular point. Section 251(c)(2) imposes an interconnection duty at any technically feasible point; it does not limit that duty to a specific method of interconnection or access to unbundled elements.

550. Physical and virtual collocation are the only methods of interconnection or access specifically addressed in section 251. Under section 251(c)(6), incumbent LECs are under a duty to provide physical collocation of equipment necessary for interconnection unless the LEC can demonstrate that physical collocation is not practical for technical reasons or because of space limitations. In that event, the incumbent LEC is still obligated to provide virtual collocation of interconnection equipment. Under section 251, the only limitation on an incumbent LEC's duty to provide interconnection or access to unbundled elements at any technically feasible point is addressed in section 251(c)(6) regarding physical collocation. Unless a LEC can establish that the specific technical or space limitations in subsection (c)(6) are met with respect to physical collocation, we conclude that incumbent LECs must provide for any technically feasible method of interconnection or access requested by a competing carrier, including physical collocation.[1340] If, for example, we interpreted section 251(c)(6) to limit the means of interconnection available to requesting carriers to physical and virtual collocation, the requirement in section 251(c)(2) that interconnection be made available "at any technically feasible point" would be narrowed dramatically to mean that interconnection was required only at points where it was technically feasible to collocate equipment. We are not pursuaded that Congress intended to limit interconnection points to locations only where collocation is possible.

551. Section 251(c)(6) provides the Commission with explicit authority to mandate physical collocation as a method of providing interconnection or access to unbundled elements. Such authority was previously found lacking by the U.S. Court of Appeals for the

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[1338] Bell Atlantic comments at 22; BellSouth comments at 23.

[1339] PacTel comments at 19.

[1340] Because we require incumbent LECs to offer virtual collocation in addition to physical collocation, we reject the suggestion of ACTA that the cost of converting from virtual to physical collocation be borne by the incumbent LEC. *See* ACTA comments at 16.

D.C. Circuit in *Bell Atlantic v. FCC*,[1341] which was decided prior to enactment of the 1996 Act. While section 251(c)(6) limits an incumbent LEC's duty to provide physical collocation in certain circumstances, we find that it does not limit our authority to require, under sections 251(c)(2) and (c)(3), the provision of virtual collocation. We note that under our *Expanded Interconnection* rules, that were amended subsequent to the Bell Atlantic decision, competitive entrants using physical collocation were required by many incumbent LECs to convert to virtual collocation. If the Commission concluded that subsection (c)(6) places a limitation on our authority to require virtual collocation, competitive providers would be required to undertake costly and burdensome actions to convert back to physical collocation even if they were satisfied with existing virtual collocation arrangements. We conclude that Congress did not intend to impose such a burden on requesting carriers that wish to continue to use virtual collocation for purposes of section 251(c). Further, the record indicates that this requirement would be costly and would delay competition.[1342] In short, we conclude that, in enacting section 251(c)(6), Congress intended to expand the interconnection choices available to requesting carriers, not to restrict them.

552. We also conclude that requiring incumbent LECs to provide virtual collocation and other technically feasible methods of interconnection or access to unbundled elements is consistent with Congress's desire to facilitate entry into the local telephone market by competitive carriers. In certain circumstances, competitive carriers may find, for example, that virtual collocation is less costly or more efficient than physical collocation. We believe that this may be particularly true for small carriers which lack the the financial resources to physically collocate equipment in a large number of incumbent LEC premises.[1343] Moreover, since requesting carriers will bear the costs of other methods of interconnection or access, this approach will not impose an undue burden on the incumbent LECs.

553. Consistent with this view, other methods of technically feasible interconnection or access to incumbent LEC networks, such as meet point arrangements, in addition to virtual

[1341] *Bell Atlantic Telephone Companies v. FCC*, 24 F.3d 1441 (D.C. Cir. 1994) (Bell Atlantic v. FCC).

[1342] *See* Teleport comments at 32; ALTS comments at 23; Time Warner comments at 42-44 (objecting to non-recurring charges for the reconnection of existing interconnected virtual collocation services to a replacement physical collocation arrangement).

[1343] *See* Hyperion comments at 15.

and physical collocation, must be available to new entrants upon request.[1344] Meet point arrangements (or mid-span meets), for example, are commonly used between neighboring LECs for the mutual exchange of traffic, and thus, in general, we believe such arrangements are technically feasible.[1345] Further, although the creation of meet point arrangements may require some build out of facilities by the incumbent LEC, we believe that such arrangements are within the scope of the obligations imposed by sections 251(c)(2) and 251(c)(3). In a meet point arrangement, the "point" of interconnection for purposes of sections 251(c)(2) and 251(c)(3) remains on "the local exchange carrier's network"[1346] (*e.g.*, main distribution frame, trunk-side of the switch), and the limited build-out of facilities from that point may then constitute an accommodation of interconnection.[1347] In a meet point arrangement each party pays its portion of the costs to build out the facilities to the meet point. We believe that, although the Commission has authority to require incumbent LECs to provide meet point arrangements upon request, such an arrangement only makes sense for interconnection pursuant to section 251(c)(2) but not for unbundled access under section 251(c)(3). New entrants will request interconnection pursuant to section 251(c)(2) for the purpose of exchanging traffic with incumbent LECs. In this situation, the incumbent and the new entrant are co-carriers and each gains value from the interconnection arrangement. Under these circumstances, it is reasonable to require each party to bear a reasonable portion of the economic costs of the arrangement. In an access arrangement pursuant to section 251(c)(3), however, the interconnection point will be a part of the new entrant's network and will be used to carry traffic from one element in the new entrant's network to another. We conclude that in a section 251(c)(3) access situation, the new entrant should pay all of the economic costs of a meet point arrangement. Regarding the distance from an incumbent LEC's premises that an incumbent should be required to build out facilities for meet point arrangements, we believe that the parties and state commissions are in a better position than the Commission to determine the appropriate distance that would constitute the required reasonable accommodation of interconnection.

[1344] *See* Teleport comments at 26-30; *see also* Washington Utilities and Transportation Commission, *Fourth Supplemental Order Rejecting Tariff Filings and Ordering Refiling*; Granting Complaints, in Part, (Washington Commission Oct. 31, 1995), Docket No. UT-941464, at 45; *Application of Electric Lightwave, Inc., MFS Intelnet of Oregon, Inc., and MCI Metro Access Transmission Services, Inc.*, Public Utility Commission of Oregon Order, Order No. 96-021, (Oregon Commission Jan. 12, 1996), at 68-69; *Rules for Telecommunications Interconnection and Unbundling*, Arizona Corporation Commission Order, Decision No. 59483, (Arizona Commission Jan. 11, 1996), Proposed Rule R14-2-1303 (Attachment E hereto).

[1345] The Michigan Commission recently required Ameritech to provide meet point interconnection. Michigan Public Service Commission, Case No. U-10860 (Michigan June 5, 1996) at 18 n.4.

[1346] 47 U.S.C. § 251(c)(2).

[1347] *See, supra* Section IV.E., above, discussing accommodation of interconnection.

554. Finally, in accordance with our interpretation of the term "technically feasible," we conclude that, if a particular method of interconnection is currently employed between two networks, or has been used successfully in the past, a rebuttable presumption is created that such a method is technically feasible for substantially similar network architectures. Moreover, because the obligation of incumbent LECs to provide interconnection or access to unbundled elements by any technically feasible means arises from sections 251(c)(2) and 251(c)(3), we conclude that incumbent LECs bear the burden of demonstrating the technical infeasibility of a particular method of interconnection or access at any individual point.

B. Collocation

1. Collocation Standards

a. Adoption of National Standards

(1). Background

555. In the NPRM we tentatively concluded that we should adopt national rules for virtual and physical collocation. This tentative conclusion was based on the belief that national standards would help to speed the development of competition.[1348] We also sought comment on specific national standards that we might adopt, and on whether any specific state approaches would serve as an appropriate model.[1349]

(2). Comments

556. Incumbent LECs and state commissions argue that collocation is a state matter and that terms and conditions for collocation should be negotiated between the parties[1350] or determined by the states.[1351] Some parties recommend that, to the extent national guidelines are necessary, the Commission should readopt the standards established in the *Expanded*

[1348] NPRM at para. 24.

[1349] NPRM at para. 70.

[1350] BellSouth comments at 23; SBC comments at 64; USTA comments at 19; PacTel comments at 34.

[1351] *See, e.g.*, New York Commission comments at 13-14; *see also* Ohio Commission comments at 29; Florida Commission comments at 22; Oregon Commission comments at 23.

Interconnection proceeding.[1352] Teleport and the New York Commission suggest that, if we adopt rules, we should use the New York Commission's "comparably efficient interconnection" standard as a model.[1353] The Alabama and Missouri Commissions support the approach to interconnection that each adopted in their respective states.[1354] Pacific Telesis supports California's "preferred outcomes approach."[1355]

557. Competitive providers generally favor national standards for collocation.[1356] MFS argues that Congress did not intend for the states to have a policy role in collocation matters, and that unambiguous national guidelines are needed to prevent incumbent LECs from engaging in discriminatory practices and to avoid duplicative litigation in multiple forums.[1357]

(3). Discussion

558. We conclude that we should adopt explicit national rules to implement the collocation requirements of the 1996 Act. We find that specific rules defining minimum requirements for nondiscriminatory collocation arrangements will remove barriers to entry by potential competitors and speed the development of competition. Our experience in the *Expanded Interconnection* proceeding indicates that incumbent LECs have an economic

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[1352] USTA comments at 19; Bell Atlantic comments at 32-33; Sprint reply at 22; California Commission comments at 24, Texas Commission comments at 13-14; District of Columbia Commission comments at 20.

[1353] Teleport comments at 30 (this standard is consistent with, if not demanded by, the requirements for nondiscriminatory interconnection in section 251(c)(2)(C)); New York Commission comments at 34 (the Commission should not set specific rules, but should adopt guidelines that incumbent LECs offer comparably efficient interconnection).

[1354] Alabama Commission comments at 17 (under Alabama's interconnection model, parties negotiate collocation arrangements and may petition the Alabama commission to require collocation under specific terms and conditions should negotiations fail); Missouri Commission comments at 12 (The Missouri Commission requires the incumbent LEC to provide the type of interconnection that the interconnecting carrier requests, either physical or virtual. The Commission also requires that large incumbent LECs tariff their interconnection arrangements, and that collocators pay a deposit).

[1355] PacTel comments at 36.

[1356] Intermedia comments at 6; Teleport comments at 30; ALTS comments at 21; Hyperion comments at 14; ACSI comments at 14; NCTA comments at 34; Telecommunications Resellers Ass'n comments at 46; Time Warner comments at 32; MFS comments at 20-21; AT&T comments at 39.

[1357] MFS comments at 20-21.

incentive to interpret regulatory ambiguities to delay entry by new competitors.[1358] We and the states should therefore adopt, to the extent possible, specific and detailed collocation rules. We find, however, that states should have flexibility to apply additional collocation requirements that are otherwise consistent with the 1996 Act and our implementing regulations.

b. Adoption of *Expanded Interconnection* Terms and Conditions for Physical and Virtual Collocation under Section 251

(1). Background

559. In our *Expanded Interconnection* proceeding, we required LECs to offer expanded interconnection to all interested parties, which allowed competitors and end users to terminate their own special access and switched transport access transmission facilities at LEC central offices.[1359] We required Tier 1 LECs[1360] to offer physical collocation, with the interconnecting party paying the LEC for central office floor space.[1361] We required that LECs provide space to interested parties on a first-come first-served basis, and that they

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[1358] Our review of the LECs' initial physical and virtual collocation tariffs raised significant concerns regarding the implementation of our *Expanded Interconnection* requirements and resulted in the designation of numerous issues for investigation. The Commission has not yet reached decisions on most of these issues, though it has found that certain rates for virtual collocation were unlawful. *See Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection Through Virtual Collocation for Special Access and Switched Transport*, 10 FCC Rcd 6375 (Com. Car. Bur. 1995)(*Phase I Report and Order*); *see also Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection for Special Access*, 8 FCC Rcd 6909 (Com. Car. Bur. 1993) (*Physical Collocation Designation Order*); *Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection Through* Virtual Collocation for Special Access and Switched Transport, 10 FCC Rcd 11116 (Com. Car. Bur. 1995)(*Virtual Collocation Designation Order*).

[1359] *Expanded Interconnection with Local Telephone Company Facilities, First Report and Order*, 7 FCC Rcd 7369 (1992)(*Special Access Order*), *vacated in part and remanded, Bell Atlantic*, 24 F.3d 1441 (1994); *First Reconsideration*, 8 FCC Rcd 127 (1993); *vacated in part and remanded, Bell Atlantic*, 24 F.3d 1441; *Second Reconsideration*, 8 FCC Rcd 7341 (1993); *Second Report and Order*, 8 FCC Rcd 7374 (1993)(*Switched Transport Order*), *vacated in part and remanded, Bell Atlantic Telephone Cos., v. FCC*, 24 F.3d 1441; *Remand Order*, 9 FCC Rcd 5154 (1994)(*Virtual Collocation Order*), *remanded for consideration of 1996 Act, Pacific Bell, et al. v. FCC*, 81 F.3d 1147 (1996) (collectively referred to as *Expanded Interconnection*). Interstate access is a service traditionally provided by local telephone companies and enables IXCs and other customers to originate and terminate interstate telephone traffic. Special access is a form of interstate access that uses dedicated transmission lines between two points, without switching the traffic on those lines. Switched transport is another form of interstate access comprising the transmission of traffic between interexchange carriers' (or other customers') points of presence and local telephone companies' end offices, where the traffic is switched and routed to end users.

[1360] Tier 1 LECs are local exchange carriers having $100 million or more in "total company annual regulated revenues." *Commission Requirements for Cost Support Material to be Filed with 1990 Annual Access Tariffs*, 5 FCC Rcd 1364, 1364 (Com. Car. Bur. 1990)(*1990 Cost Support Order*).

[1361] The interconnecting party uses the space to locate equipment necessary to terminate its transmission links for interconnection with the LEC's network. The interconnector has physical access to this space in the LEC central office to install, maintain, and repair its transmission equipment. *Special Access Order*, 7 FCC Rcd at 7391.

provide virtual collocation when space for physical collocation is exhausted.[1362] Under virtual collocation, interconnectors are allowed to designate central office transmission equipment dedicated to their use, as well as to monitor and control their circuits terminating in the LEC central office. Interconnectors, however, do not pay for the incumbent's floor space under virtual collocation arrangements and have no right to enter the LEC central office. Under our virtual collocation requirements, LECs must install, maintain, and repair interconnector-designated equipment under the same intervals and with the same or better failure rates for the performance of similar functions for comparable LEC equipment.[1363]

560. In the *Expanded Interconnection* proceeding, we required the LECs to file tariffs to implement our virtual and physical collocation requirements. Our initial review of the LECs' tariffs raised significant concerns regarding the LECs' provision of physical and virtual collocation.[1364] Consequently, the Bureau partially suspended the rates proposed by many of the LECs and allowed these rates to take effect subject to investigation and an accounting order.

561. In 1994, the U.S. Court of Appeals for the District of Columbia Circuit found that the FCC lacked the authority under section 201 of the 1934 Communications Act to require physical collocation and remanded all other issues to the Commission.[1365] On remand, we adopted rules for both special access and switched transport that required LECs to provide either virtual or physical collocation, at the LECs' option.[1366] Those rules currently are in place, although the court of appeals remanded the *Remand Order* to us to consider the impact of the 1996 Act on those rules.[1367] In the 1996 Act, Congress specifically directed incumbent LECs to provide physical collocation for interconnection and access to unbundled network

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[1362] 7 FCC Rcd at 7391.

[1363] *Special Access Order*, 7 FCC Rcd at 7394; *Switched Transport Order*, 8 FCC Rcd at 7393.

[1364] *See Special Access Physical Collocation Designation Order*, 8 FCC Rcd 6909; *Virtual Collocation Designation Order*, 10 FCC Rcd 11116; *see also supra*, note 1358.

[1365] *Bell Atlantic v. FCC*, 24 F.3d 1441.

[1366] *Remand Order*, 9 FCC Rcd 5154.

[1367] *Pacific Bell et al. v. FCC*, 81 F.3d 1147 (D.C. Cir. 1996). As discussed in Section VI.B.2.a, below, we find that the 1996 Act does not supplant or otherwise alter our *Expanded Interconnection* rules for interstate interconnection services provided pursuant to section 201 of the Communications Act.

elements, absent technical or space constraints, pursuant to section 251(c)(6) of the Communications Act.[1368]

562. We sought comment in the NPRM on whether, for purposes of implementing physical and virtual collocation under section 251, we should readopt the standards set out in our *Expanded Interconnection* proceeding and, if so, how to adapt those standards to reflect the new statutory requirements and other policy considerations of the 1996 Act.[1369]

(2). Comments

563. To the extent parties addressed the substantive content of national rules, most favor readoption of the *Expanded Interconnection* rules. Assuming that national standards are to be adopted, several state commissions and a number of incumbent LECs generally favor readoption of our *Expanded Interconnection* requirements because they were developed based on an extensive record.[1370] BellSouth, in contrast, argues that the Commission's *Expanded Interconnection* rules are no longer necessary under the 1996 Act, because parties should be free to negotiate agreements between themselves without being governed by FCC rules.[1371] SBC and Pacific Telesis argue that physical collocation should be negotiated in order to allow parties to address unique requirements.[1372] Cincinnati Bell argues that the FCC should not establish regulations regarding services that are ancillary to collocation such as rent, insurance, and equipment maintenance, because they are not activities within the purview of Title II of the Communications Act.[1373]

[1368] 47 U.S.C. § 251(c)(6).

[1369] NPRM at para. 71.

[1370] Bell Atlantic comments at 33; Cincinnati Bell comments at 15; PacTel comments at 35; NYNEX comments at 66; Roseville Tel. comments at 2-3; SNET comments at 15; GTE comments at 24 (*Expanded Interconnection* rules should be readopted if used to identify acceptable outcomes and not to dictate behavior); *see also* Alabama Commission comments at 17; Texas Commission comments at 14; Illinois Commission comments at 35.

[1371] BellSouth comments at 24 (the Act sets up a new framework under which the parties must be free to negotiate arrangements "unencumbered by excessive rules and regulations").

[1372] PacTel reply at 12; SBC comments at 64 (collocation should be negotiated and should not be subject to uniform requirements because of the differing conditions at each location).

[1373] Cincinnati Bell comments at 15.

564. CAPs and IXCs also generally favor readoption of our *Expanded Interconnection* requirements.[1374] Several commenters advocate specific amendments that they believe are required by the 1996 Act or by intervening circumstances.[1375] MFS, however, argues that the purposes of the 1996 Act are much broader than those of the *Expanded Interconnection* proceedings and that the collocation standards under section 251 should reflect this difference.[1376] MCI contends that existing collocation rules, terms, and conditions should be significantly modified.[1377] Teleport asserts that the Commission should require all incumbent LECs to refile with the FCC their most recent physical collocation tariffs, subject to the previously applicable accounting orders.[1378]

(3). Discussion

565. We conclude that we should adopt the existing *Expanded Interconnection* requirements, with some modifications, as the rules applicable for collocation under section 251.[1379] Those rules were established on the basis of an extensive record in the *Expanded Interconnection* proceeding, and are largely consistent with the requirements of section 251(c)(6). Adoption of those requirements for purposes of collocation under section 251, moreover, has substantial support in the record of this proceeding. Thus, the standards established for physical and virtual collocation in our *Expanded Interconnection* proceeding will generally apply to collocation under section 251. The most significant requirements of *Expanded Interconnection* are specifically set out in rules we adopt here. We address pricing and rate structure issues separately, in section VII below.

566. We find, however, that certain modifications to our *Expanded Interconnection* requirements are necessary to account for specific provisions of section 251(c)(6) and service

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[1374] *See, e.g.*, Sprint comments at 21; Time Warner comments at 38; Intermedia comments at 6.

[1375] ALTS comments at 24; Telecommunications Resellers Ass'n comments at 47; Intermedia comments at 9 (incumbent LECs must tariff cross-connect elements for services not currently offered, such as packet switching, frame relay, ATM, and SONET services); ACSI comments at 16 (revised *Expanded Interconnection* rules should reflect resolution of issues raised in designation orders).

[1376] MFS comments at 22; *see also* MCI comments at 54.

[1377] MCI comments at 58.

[1378] Teleport comments at 31; Intermedia comments at 7 (arguing that LECs must establish terms and conditions for physical collocation within 30 days).

[1379] *See Remand Order*, 9 FCC Rcd at 5168-69, 5174-83.

arrangements that differ from those contemplated in our *Expanded Interconnection* orders.[1380] For example, the *Expanded Interconnection* requirements apply to Tier 1 LECs that are not NECA pool members, and section 251 applies to "incumbent LECs," though there is an exemption for certain rural carriers.[1381] *Expanded Interconnection* also allows end-users to interconnect their equipment, while section 251 requires that interconnection and access to unbundled network elements be provided to "any requesting telecommunications carrier."[1382] Accordingly, we set forth below several modifications to the terms and conditions for collocation as they are described in our *Expanded Interconnection* orders for application in implementing section 251. We believe that, in light of the expedited statutory time frame for this rulemaking and limited record addressing the specific terms and conditions for collocation under section 251 in this proceeding, it would be impractical and imprudent to develop a large number of new substantive collocation requirements in this order. We may consider the need for additional or different requirements in a subsequent proceeding, if we determine that such action is warranted.

567. The most significant difference between the *Expanded Interconnection* rules and the collocation rules we adopt to implement the 1996 Act concerns the collocation tariffing requirement. As discussed below, the 1996 Act does not require that collocation be federally tariffed.[1383] We thus do not adopt, under section 251, the *Expanded Interconnection* tariffing requirements originally adopted under section 201 for physical and virtual collocation. The existing tariffing requirements of *Expanded Interconnection* for interstate special access and switched transport will continue to apply for use by customers that wish to subscribe to those interstate services.[1384]

568. We reject SBC's contention that we may not adopt any terms and conditions in this proceeding that differ from those in the *Expanded Interconnection* proceeding. SBC argues that Congress intended, in section 251(c)(6), to use the term "physical collocation" as a erm of art, and thereby to adopt wholesale the terms and conditions for physical collocation hat the Commission adopted in the *Expanded Interconnection* proceeding. A variety of terms nd conditions for physical collocation are possible and section 251(c)(6) makes no reference) the Commission's decisions on these issues in the *Expanded Interconnection* proceeding. If

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) *See supra*, note 1358, 1359.

See infra, Section XII.

See 47 U.S.C. § 251(c)(2), (3).

ee infra, Section VI.B.2.a.

e infra, Section VI.B.2.a.

Congress had intended to readopt those rules wholesale without permitting the Commission any flexibility in the matter, we believe that Congress would have been more explicit rather than merely using the phrase "physical collocation." Thus, we believe that we can and should modify our preexisting standards, as set forth below, for purposes of implementing the provisions of section 251(c)(6). In the following sections (c. - i.) we address comments filed by interested parties concerning application of our existing *Expanded Interconnection* requirements for purposes of collocation under section 251.[1385]

569. Finally, our experience reviewing the tariffs that incumbent LECs filed to implement our requirements for physical and virtual collocation suggests that rates, terms, and conditions under which incumbent LECs propose to provide these arrangements pursuant to section 251(c)(6) bear close scrutiny.[1386] We strongly urge state commissions to be vigilant in their review of such arrangements.[1387] We will review this issue and revise our requirements as necessary.

c. The Meaning of the Term "Premises"

(1). Background

570. In the *Expanded Interconnection* proceeding, we required collocation at end offices, serving wire centers, and tandem switches, as well as at remote distribution nodes and any other points that the LEC treats as a "rating point."[1388] Section 251(c)(6) requires physical collocation "at the premises of the local exchange carrier."[1389] In the NPRM, we tentatively concluded that the term "premises" includes, in addition to LEC central offices and tandem offices, all buildings or similar structures owned or leased by the incumbent LEC that house LEC network facilities. We sought comment on whether structures that house LEC

[1385] In a number of instances, we decline to adopt proposals for modifications to our *Expanded Interconnection* requirements.

[1386] *See Special Access Physical Collocation Designation Order*, 8 FCC Rcd 6909; *Virtual Collocation Designation Order*, 10 FCC Rcd 11116.

[1387] Some areas our investigations have found problematic in the past include channel assignment, letters of agency, charges for repeaters, and placement of point-of-termination bays.

[1388] *See Remand Order*, 9 FCC Rcd at 5168; *Special Access Order*, 7 FCC Rcd at 7418; *Switched Transport Order*, 8 FCC Rcd at 7409. A rating point is a point used in calculating the length of interoffice special access links.

[1389] 47 U.S.C. § 251(c)(6).

network facilities on public rights-of-way, such as vaults containing loop concentrators or similar structures, should be deemed to be LEC "premises."[1390]

(2). Comments

571. Incumbent LECs generally argue that collocation is infeasible at locations other than central offices, tandem switching locations, and remote nodes, and that only such locations should be included in the interpretation of the word "premises."[1391] Pacific Telesis argues that points for collocation cannot be determined until the Commission determines the points of interconnection and access to unbundled network elements.[1392] Ameritech contends that we should define the term "premises" as only those portions of central office buildings in which the LEC has the exclusive right of occupancy and in which the technically feasible point of interconnection or access to unbundled elements is located.[1393] The Rural Tel. Coalition asks that interconnection and collocation points be established in a flexible manner to recognize size and volume differences among carriers.[1394]

572. CAPs and IXCs generally favor an expansive definition of the term "premises" that includes "structures housing LEC network facilities on public rights-of-way including vaults containing loop concentrators or similar structures."[1395] These commenters argue that physical collocation should be offered at any incumbent LEC location where physical collocation is technically feasible, including central offices, cable vaults, manholes, cross-connect points, loop carrier, and building closets.[1396] ALTS and MFS contend that assertions of technical infeasibility should be addressed in fact-specific situations and should not narrow

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[1390] NPRM at para. 72.

[1391] *See, e.g.*, USTA comments at 20; NYNEX comments at 66; Cincinnati Bell comments at 15; Ameritech comments at 22 (the term "premises" should only include central offices housing network facilities in which the incumbent LEC has the exclusive right of occupancy).

[1392] Bell Atlantic comments at 37.

[1393] Ameritech comments at 22.

[1394] Rural Tel. Coalition comments at 31.

[1395] *See, e.g.*, AT&T comments at 40; *see also* Telecommunications Resellers Ass'n comments at 46; Hyperion comments at 14.

[1396] *See, e.g.*, MFS comments at 23.

the general application of section 251(c)(6).[1397] The Illinois Commission supports our tentative conclusion and argues that collocation should not be restricted to central and tandem offices.[1398]

(3). Discussion

573. The 1996 Act does not address the definition of premises, nor is the term discussed in the legislative history. Therefore, we look to the purposes of the 1996 Act and general uses of the term "premises" in other contexts in order to define this term for purposes of section 251(c)(6). The term "premises" is defined in varying ways, according to the context in which it is used.[1399] In light of the 1996 Act's procompetitive purposes, we find that a broad definition of the term "premises" is appropriate in order to permit new entrants to collocate at a broad range of points under the incumbent LEC's control. A broad definition will allow collocation at points other than those specified for collocation under the existing *Expanded Interconnection* requirements. We find that this result is appropriate because the purposes of physical and virtual collocation under section 251 are broader than those established in the *Expanded Interconnection* proceeding. We therefore interpret the term "premises" broadly to include LEC central offices, serving wire centers and tandem offices, as well as all buildings or similar structures owned or leased by the incumbent LEC that house LEC network facilities. We also treat as incumbent LEC premises any structures that house LEC network facilities on public rights-of-way, such as vaults containing loop concentrators or similar structures.

574. As discussed below, we conclude that section 251(c)(6) requires collocation only where technically feasible. In light of this conclusion, we find that adoption of a definition of "premises" that depends on whether interconnection or access to unbundled network elements at a particular point is "technically feasible," as suggested by Ameritech and Pacific Telesis, would be superfluous. We also conclude that it is not appropriate to adopt a definition of "premises," as suggested by several parties, that is dependent on whether it is "practical" to collocate equipment at a particular point. We note however, that neither

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[1397] ALTS reply at 35; MFS reply at 29.

[1398] Illinois Commerce Commission at 33.

[1399] *See Gibbons v. Brandt*, 170 F.2d 385, 387 (7th Cir. 1948) ("the word 'premises' does not have one fixed and absolute meaning. It is to be determined always by its context . . .").

physical nor virtual collocation is required at points where not technically feasible.[1400] We therefore decline to adopt specific requirements regarding collocation at particular points in the LEC network, as suggested by GVNW and others. Because collocation is only required where technically feasible, the approach we here adopt will enable competitors to take advantage of opportunities to collocate equipment without imposing undue burdens on incumbent LECs, whether large or small.

575. We also address the impact on small incumbent LECs. For example, the Rural Tel. Coalition asks that interconnection and collocation points be established in a flexible manner. We have considered the economic impact of our rules in this section on small incumbent LECs. For example, we do not adopt rigid requirements for locations where collocation must be provided. Incumbent LECs are not required to physically collocate equipment in locations where not practical for technical reasons or because of space limitations, and virtual collocation is required only where technically feasible. We also note, however, that section 251(f) of the 1996 Act provides relief to certain small LECs from our regulations implementing section 251.[1401]

d. Collocation Equipment

(1). Background

576. In the *Expanded Interconnection* proceeding, we allowed collocation for central office equipment needed to terminate basic transmission facilities between LEC central offices and third-party premises. Acceptable equipment included optical terminating equipment and multiplexers. We did not require the LECs to permit collocation of enhanced services equipment or customer premises equipment because such equipment was not necessary to foster competition in the provision of basic transmission services. We also did not require LECs to allow the collocation of switches.[1402] Section 251(c)(6) requires incumbent LECs to allow collocation of "equipment necessary for interconnection or access to unbundled elements

[1400] Incumbent LECs are required to permit the collocation of equipment for the purpose of interconnection under section 251(c)(2) or access to unbundled network elements under section 251(c)(3). Interconnection and access to unbundled network elements are only required under these sections at technically feasible points. 47 U.S.C. § 251(c)(2) and (3).

[1401] *See infra*, Section XII.

[1402] *See generally Remand Order*, 9 FCC Rcd at 5178-81 (paras. 82-94); *see also Special Access Order*, 7 FCC Rcd at 7412-16, *Switched Transport Order*, 8 FCC Rcd at 7411-16.

. . . ."[1403] We sought comment in the NPRM on what types of equipment competitors should be permitted to collocate on LEC premises.[1404]

(2). Comments

577. BOCs and other incumbent LECs generally favor limiting the type of equipment allowed to be collocated to transmission equipment necessary to interconnect to LEC networks.[1405] Sprint argues that incumbent LECs should be permitted to limit the amount of space they have to provide to that needed for equipment necessary for the particular type of interconnection that is taking place.[1406] IXCs and CAPs argue that any type of equipment may be collocated absent demonstrable harm to the LEC, and that any arbitrary limit on the types of equipment to be collocated could foreclose efficient methods of interconnection and/or access to unbundled elements.[1407] MFS contends that competing providers should not be required to demonstrate affirmatively that equipment is "necessary" before allowing it to be collocated. The Illinois Commission supports a policy that would not restrict the type of equipment to be collocated except where necessary to prevent harm to the network. The Colorado Commission supports limiting allowable equipment to that used to provide a telecommunications service.[1408] The Association of Telemessaging Services International urges the Commission to require collocation of equipment used to provide enhanced services.[1409]

578. WinStar argues that the 1996 Act establishes its right to place its microwave facilities on the roofs of incumbent LEC buildings in which its termination equipment is to be

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[1403] 47 U.S.C. § 251(c)(6).

[1404] NPRM at para.72.

[1405] *See, e.g.*, SBC comments at 63-64; Bell Atlantic comments at 34; GTE reply at 14; PacTel comments at 38, reply at 13.

[1406] Sprint reply at 23.

[1407] *See, e.g.*, MFS comments at 24; MCI comments at 54-55; Time Warner comments at 39; GCI comments at 10.

[1408] Illinois Commission comments at 34; Colorado Commission comments at 23.

[1409] Association of Telemessaging Services International reply at 16.

collocated in order to ensure that wireline facilities are not favored over wireless, and therefore urges the Commission to adopt a collocation standard that is technology neutral.[1410]

(3). Discussion

579. We believe that section 251(c)(6) generally requires that incumbent LECs permit the collocation of equipment used for interconnection or access to unbundled network elements. Although the term "necessary," read most strictly, could be interpreted to mean "indispensable," we conclude that for the purposes of section 251(c)(6) "necessary" does not mean "indispensable" but rather "used" or "useful." This interpretation is most likely to promote fair competition consistent with the purposes of the Act. (We note that this view is consistent with the findings of the Colorado Commission).[1411] Thus, we read section 251(c)(6) to refer to equipment used for the purpose of interconnection or access to unbundled network elements.[1412] Even if the collocator could use other equipment to perform a similar function, the specified equipment may still be "necessary" for interconnection or access to unbundled network elements under section 251(c)(6). We can easily imagine circumstances, for instance, in which alternative equipment would perform the same function, but with less efficiency or at greater cost. A strict reading of the term "necessary" in these circumstances could allow LECs to avoid collocating the equipment of the interconnectors' choosing, thus undermining the procompetitive purposes of the 1996 Act.

580. Consistent with this interpretation, we conclude that transmission equipment, such as optical terminating equipment and multiplexers, may be collocated on LEC premises. We also conclude that LECs should continue to permit collocation of any type of equipment currently being collocated to terminate basic transmission facilities under the *Expanded Interconnection* requirements. In addition, whenever a telecommunications carrier seeks to collocate equipment for purposes within the scope of section 251(c)(6), the incumbent LEC shall prove to the state commission that such equipment is not "necessary," as we have defined that term, for interconnection or access to unbundled network elements. State commissions may designate specific additional types of equipment that may be collocated pursuant to section 251(c)(6).

[1410] WinStar comments at 4, reply at 4.

[1411] Colorado Public Utilities Commission, *Proposed Rules Regarding Implementation of §§ 40-15-101 et. seq., Requirements Relating to Interconnection and Unbundling,* Docket No. 95R-556T, (Colorado Commission, March 29, 1996) at 19-20.

[1412] *Cf. National Railroad Passenger Corporation v. Boston and Maine Corp.,* 503 U.S. 407, 417 (1992) (upholding the ICC's interpretation of the word "required" as "useful or appropriate," rather than "indispensable"); *McCulloch v. Maryland,* 4 Wheat. 316, 413 (1819) (Chief Justice Marshall read the word "necessary" to mean "convenient, or useful," rejecting a stricter reading of the term).

581. We do not find, however, that section 251(c)(6) requires collocation of equipment used to provide enhanced services, contrary to the arguments of the Association of Telemessaging Services International.[1413] We also decline to require incumbent LECs to allow collocation of any equipment without restriction.[1414] Section 251(c)(6) requires collocation only of equipment "necessary for interconnection or access to unbundled elements." Section 251(c)(2) requires incumbent LECs to provide "interconnection" for the "transmission and routing of telephone exchange service and exchange access," and section 251(c)(3) requires incumbent LECs to provide access to unbundled network elements "for the provision of a telecommunications service."[1415] Section 251(c)(6) therefore requires incumbent LECs to provide physical or virtual collocation only for equipment "necessary" or used for those purposes. We find that section 251(c)(6) does not require collocation of equipment necessary to provide enhanced services.[1416] At this time, we do not impose a general requirement that switching equipment be collocated since it does not appear that it is used for the actual interconnection or access to unbundled network elements.[1417] We recognize, however, that modern technology has tended to blur the line between switching equipment and multiplexing equipment, which we permit to be collocated. We expect, in situations where the functionality of a particular piece of equipment is in dispute, that state commissions will determine whether the equipment at issue is actually used for interconnection or access to unbundled elements. We also reserve the right to reexamine this issue at a later date if it appears that such action would further achievement of the 1996 Act's procompetitive goals. Finally, because we lack an adequate record on the issue, we decline to adopt AT&T's

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[1413] ATSI reply at 16.

[1414] *See, e.g.*, MFS comments at 24.

[1415] 47 U.S.C. § 251(c)(3).

[1416] We note that we declined to require collocation of enhanced services equipment in our *Computer III* and *ONA* proceedings. *See Third Computer Inquiry*, Report and Order, 104 FCC 2d 958, 1037-38 (1986); *Computer III Remand*, 6 FCC Rcd 7571 (1991). Enhanced services are defined as services that "employ computer processing applications which act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different, or restructured information; or involve subscriber interaction with stored information." 47 C.F.R. § 64.702. This definition appears not to include the provision of "telecommunications services." *See* 47 U.S.C. § 153(43), (46).

[1417] If switching equipment is located at the collocated space, generally the only equipment used for interconnection or access to unbundled elements is the cross-connect equipment. The switching equipment generally performs other functions.

proposal that we require that incumbent LECs allow collocated equipment to be used for "hubbing."[1418]

582. In response to WinStar's suggestion that we require collocation of microwave transmission facilities, we note that collocation of microwave transmission equipment was required where reasonably feasible by the *Special Access Order*.[1419] We also require the collocation of microwave equipment under section 251, although we modify the *Expanded Interconnection* standard we adopt under section 251 for when such collocation is required slightly to conform to the standard for the provision of physical collocation in section 251(c)(6). We therefore require that incumbent LECs allow competitors to use physical collocation for microwave transmission facilities except where this is not practical for technical reasons or because of space limitations, in which case virtual collocation is required where technically feasible.[1420]

e. Allocation of Space

(1). Background

583. In the *Expanded Interconnection* proceeding, we required LECs to allocate space for physical collocation on a first-come, first-served basis. We also required LECs to take into account interconnector demand for collocation space when reconfiguring space or building new central offices, and we found that imposing reasonable restrictions on warehousing of space by collocating carriers was appropriate.[1421] The NPRM sought comment on whether national guidelines would deter anticompetitive behavior through the manipulation or unreasonable allocation of space by either incumbent LECs or new entrants.[1422]

(2). Comments

[1418] AT&T advocates requiring LECs to allow new entrants to "connect additional equipment of their own to their collocated equipment in the collocated space." Letter from Betsy Brady, Federal Government Affairs Director and Attorney, to Robert McDonald, Common Carrier Bureau, July 12, 1996, at 3, n.2 (AT&T July 12, 1996 *Ex Parte*). *See also* AT&T comments at 40 n. 51.

[1419] *Special Access Order*, 7 FCC Rcd at 7416; *see also Remand Order*, 9 FCC Rcd at 5178-79.

[1420] Under our technical feasibility standard, the costs of any construction necessary to accommodate the proposed interconnection arrangement are to be borne by the party seeking to interconnect. *See supra*, Section IV.E.

[1421] *Special Access Order*, 7 FCC Rcd at 7408.

[1422] NPRM at para.72.

584. CAPs and IXCs support adoption of rules governing incumbent LEC space allocation. AT&T asserts that incumbent LECs should be required to consider the needs of collocators when remodeling or building new facilities.[1423] MFS and Teleport contend that incumbent LECs should not be able to limit the amount of space that may be occupied by an interconnector's equipment unless the incumbent LEC demonstrates that space is nearing exhaustion.[1424] MCI asserts that we should prohibit an incumbent LEC from denying a collocator use of available space unless the incumbent demonstrates that it had plans for such space prior to the request for collocation.[1425] In locations where space is scarce, MCI argues that incumbent LECs should be required to file reports with the FCC on the status and planned increase and use of space.[1426] Bell Atlantic counters that such a policy could prevent it from serving its customers efficiently.[1427] Pacific Telesis suggests that the Commission reiterate its policy of allowing "reasonable restrictions on warehousing of unused space by interconnectors."[1428] The Pennsylvania Commission asserts that it is not necessary for the FCC to adopt national guidelines regarding space allocation.[1429] GVNW argues that collocation should be required in rural areas only where there is space available.[1430]

(3). Discussion

585. We believe that incumbent LECs have the incentive and capability to impede competitive entry by minimizing the amount of space that is available for collocation by competitors. Accordingly, we adopt our *Expanded Interconnection* space allocation rules for purposes of section 251, except as indicated herein. LECs will thus be required to make space available to requesting carriers on a first-come, first-served basis. We also conclude

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[1423] AT&T comments at 41-42 (where space is unavailable incumbent LECs should be required to provide trunking at no extra cost and enable the interconnector to connect to designated equipment elsewhere, with a timetable for moving the interconnector to the incumbent LEC's premises when space becomes available).

[1424] MFS comments at 34; Teleport comments at 33.

[1425] MCI comments at 56.

[1426] MCI comments at 56.

[1427] Bell Atlantic reply at 16.

[1428] PacTel comments at 36.

[1429] Pennsylvania Commission comments at 22.

[1430] GVNW comments at 8.

that collocators seeking to expand their collocated space should be allowed to use contiguous space where available. We further conclude that LECs should not be required to lease or construct additional space to provide physical collocation to interconnectors when existing space has been exhausted. We find such a requirement unnecessary because section 251(c)(6) allows incumbent LECs to provide virtual collocation where physical collocation is not practical for technical reasons or because of space limitations. Consistent with the requirements and findings of the *Expanded Interconnection* proceeding, we conclude that incumbent LECs should be required to take collocator demand into account when renovating existing facilities and constructing or leasing new facilities, just as they consider demand for other services when undertaking such projects. We find that this requirement is necessary in order to ensure that sufficient collocation space will be available in the future. We decline, however, to adopt a general rule requiring LECs to file reports on the status and planned increase and use of space. State commissions will determine whether sufficient space is available for physical collocation, and we conclude that they have authority under the 1996 Act to require incumbent LECs to file such reports. We expect individual state commissions to determine whether the filing of such reports is warranted.

586. We also agree with Pacific Telesis that restrictions on warehousing of space by interconnectors are appropriate.[1431] Because collocation space on incumbent LEC premises may be limited, inefficient use of space by one competitive entrant could deprive another entrant of the opportunity to collocate facilities or expand existing space. In the *Expanded Interconnection* proceeding, we allowed "reasonable restrictions on warehousing of space,"[1432] and will adopt this provision for purposes of section 251. As discussed below, we also adopt measures to ensure that incumbent LECs themselves do not unreasonably "warehouse" space, although we do permit them to reserve a limited amount of space for specific future uses.[1433] Incumbent LECs, however, are not permitted to set maximum space limitations without demonstrating that space constraints make such restrictions necessary, as such maximum limits could constrain a collocator's ability to provide service efficiently.

587. We also address the impact on small incumbent LECs. For example, GVNW argues that we should require collocation in rural areas only where there is space available. We have considered the impact of our rules in this section on small incumbent LECs and do not require physical collocation at any point where there is insufficient space available. We decline, however, to adopt rules regarding space availability that apply differently to small, rural carriers because the rules we here adopt are sufficiently flexible. We also note,

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[1431] PacTel comments at 36.

[1432] *Special Access Order*, 7 FCC Rcd at 7408; *see also Remand Order*, 9 FCC Rcd at 187-88.

[1433] *See infra*, Section VI.B.1.i.

however, that section 251(f) of the 1996 Act provides relief to certain small LECs from our regulations implementing section 251.[1434]

f. Leasing Transport Facilities

(1). Background

588. Our *Expanded Interconnection* rules require LECs to provide collocation for the purpose of allowing collocators to terminate their own transmission facilities for special access or switched transport service.[1435] We did not require that collocation be made available for other purposes, for example, when the interconnecting party wished only to connect incumbent LEC transmission facilities to collocated equipment. We sought comment in the NPRM on whether we should modify the standards of the *Expanded Interconnection* proceeding in light of the new statutory requirements and disputes that have arisen in the investigations regarding the incumbent LECs' physical and virtual collocation tariffs.[1436]

(2). Comments

589. MCI and others argue that collocators should not be prohibited from leasing transport facilities from the incumbent LEC to connect equipment in the collocated space to any other point in the incumbent LEC's network.[1437] Pacific Telesis contends that LECs should not be required to permit collocation of equipment that will be connected to a LEC's transmission facilities because such a policy would result in exhaustion of central office space and is outside the purposes of the 1996 Act.[1438] Bell Atlantic argues that permitting such interconnection is not advisable, because it would allow resellers to obtain lower-priced interconnection and access to unbundled elements without providing any facilities of their own.[1439]

[1434] *See infra*, Section XII.

[1435] *See Remand Order*, 9 FCC Rcd at 5180-81, 5183; *Special Access Order*, 7 FCC Rcd at 7403; *Switched Transport Order*, 8 FCC Rcd at 7402.

[1436] NPRM at para. 73.

[1437] MCI comments at 55; ACTA comments at 16; Telecommunications Resellers Ass'n comments at 47.

[1438] PacTel comments at 39, reply at 14.

[1439] Bell Atlantic reply at 16.

(3). Discussion

590. Although in *Expanded Interconnection* the Commission required that interested parties interconnect collocated equipment with their own transmission facilities,[1440] we conclude that it would be inconsistent with the provisions of the 1996 Act to adopt that requirement under section 251. Rather, we conclude that a competitive entrant should not be required to bring transmission facilities to LEC premises in which it seeks to collocate facilities. Entrants should instead be permitted to collocate and connect equipment to unbundled network transmission elements obtained from the incumbent LEC. The purpose of the *Expanded Interconnection* requirement was to foster competition in the market for interstate switched and special access transmission facilities.[1441] The purposes of section 251 are broader. Section 251(c)(3) requires that competitive entrants be given access to unbundled elements and that they be permitted to combine such elements.[1442] Prohibiting competitors from connecting unbundled network elements to their collocated equipment would appear contrary to the provisions of section 251(c)(3).

591. Finally, we find that Bell Atlantic's opposition to this requirement is without merit. Bell Atlantic argues that collocators should be required to provide their own transmission facilities because otherwise new entrants could compete without providing any of their own facilities. Section 251(c)(3) specifically states that unbundled elements are to be provided in a manner that allows requesting carriers to combine elements in order to provide telecommunications service. As stated above, requiring collocators to supply their own transmission facilities would amount to a prohibition on connecting unbundled transmission facilities to other unbundled elements connected to equipment in the collocation space. Although such interconnection arrangements were not required by our *Expanded Interconnection* requirements, we conclude that they are required by section 251 when collocated equipment is used to achieve interconnection or access to unbundled network elements.

g. Co-Carrier Cross-Connect

(1). Background

592. In the most common collocation configuration under existing requirements, the designated physical collocation space of several competitive entrants is located close together

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[1440] *Special Access Order*, 7 FCC Rcd at 7403; *Switched Transport Order*, 8 FCC Rcd at 7402.

[1441] *See Special Access Order*, 7 FCC Rcd at 7372; *Switched Transport Order*, 8 FCC Rcd at 7377.

[1442] 47 U.S.C. 251(c)(3).

within the LEC premises. Since carriers connect to the collocation space via high-capacity lines, different competitive entrants seeking to interconnect with each other may find connecting between their respective collocation spaces on the LEC premises the most efficient means of interconnecting with each other. We sought comment in the NPRM on whether we should adopt any requirements in addition to those adopted in the *Expanded Interconnection* proceeding in order to fulfill the mandate of the 1996 Act.[1443]

(2). Comments

593. Several CAPs and IXCs argue that we should adopt as an additional requirement that interconnectors be allowed to connect directly to other collocators located at the collocation space.[1444] Incumbent LECs generally object to such a configuration on the basis that such access is not expressly required by the statute and that we therefore lack authority to impose such a requirement.[1445]

(3). Discussion

594. We believe that it serves the public interest and is consistent with the policy goals of section 251 to require that incumbents permit two or more collocators to interconnect their networks at the incumbent's premises. Parties opposed to this proposal have offered no legitimate objection to such interconnection. Allowing incumbent LECs to prohibit collocating carriers from interconnecting their collocated equipment would require them to interconnect collocated facilities by routing transmission facilities outside of the LECs' premises. We find that such a policy would needlessly burden collocating carriers. To the extent equipment is collocated for the purposes expressly permitted under section 251(c)(6), the statute does not bar us from requiring that incumbent LECs allow connection of such equipment to other collocating carriers located nearby. We find that requiring LECs to allow such interconnection of collocated equipment will foster competition by promoting efficient operation. It is also unlikely to have a significant effect on space availability. We find authority for such a requirement in section 251(c)(6), which requires that collocation be provided on "terms and conditions that are just, reasonable, and nondiscriminatory" and in section 4(i), which permits the Commission to "perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with this Act, as may be necessary in the

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[1443] NPRM at para. 73.

[1444] *See, e.g.*, MCI comments at 55; MFS comments at 24; GGI comments at 10; Telecommunications Resellers Ass'n comments at 47; Intermedia comments at 9.

[1445] *See, e.g.*, GTE reply at 15; Bell Atlantic reply at 15; PacTel reply at 14; Sprint reply at 23.

execution of its functions."[1446] We therefore will require that incumbent LECs allow collocating telecommunications carriers to connect collocated equipment to such equipment of other carriers within the same LEC premises so long as the collocated equipment is used for interconnection with the incumbent LEC or access to the LEC's unbundled network elements.

595. We clarify that we here require incumbent LECs to provide the connection between the equipment in the collocated spaces of two or more collocating telecommunications carriers unless they permit the collocating parties to provide this connection for themselves. We do not require incumbent LECs to allow placement of connecting transmission facilities owned by competitors within the incumbent LEC premises anywhere outside of the actual physical collocation space.

h. Security Arrangements

(1). Background

596. Under our *Expanded Interconnection* requirements, incumbent LECs typically require that physically collocated equipment be placed inside a collocation cage within the incumbent LEC facility. Such cages are intended to separate physically the competitors' facilities from those of the incumbent and to prevent access by unauthorized personnel to any parties' equipment. Such cages frequently add considerably to the cost of establishing physical collocation at a particular LEC premises and could constitute a barrier to entry in certain circumstances.

(2). Comments

597. Teleport argues that cage construction is one of the most expensive items associated with physical collocation and that we should modify our *Expanded Interconnection* requirements to allow new entrants to subcontract construction of their physical collocation security arrangements with contractors approved by the incumbent LEC.[1447] ALTS and MCI argue that security measures should only be provided at the request of the entrant and at the cost the entrant would have incurred if it performed the construction itself.[1448] GVNW

[1446] 47 U.S.C. § 154(i).

[1447] Teleport comments at 32.

[1448] ALTS comments at 23; MCI comments at 58; *contra* PacTel reply at 15.

argues that incumbent LECs need to ensure that a competitor's personnel do not cause breaches of security and therefore should be subject to minimum proficiency requirements.[1449]

(3). Discussion

598. Based on the comments in this proceeding and our previous experience with physical collocation in the *Expanded Interconnection* docket, we will continue to permit LECs to require reasonable security arrangements to separate an entrant's collocation space from the incumbent LEC's facilities. The physical security arrangements around the collocation space protect both the LEC's and competitor's equipment from interference by unauthorized parties. We reject the suggestion of ALTS and MCI that security measures be provided only at the request of the entrant since LECs have legitimate security concerns about having competitors' personnel on their premises as well. We conclude that the physical separation provided by the collocation cage adequately addresses these concerns. At the same time, we recognize that the construction costs of physical security arrangements could serve as a significant barrier to entry, particularly for smaller competitors. We also conclude that LECs have both an incentive and the capability to impose higher construction costs than the new entrant might need to incur. We therefore conclude that collocating parties should have the right to subcontract the construction of the physical collocation arrangements with contractors approved by the incumbent LEC. Incumbent LECs shall not unreasonably withhold such approval of contractors. Approval by incumbent LECs of such contractors should be based on the same criteria as such LECs use for approving contractors for their own purposes. We decline, however, to require that competitive entrants' personnel be subject to minimum training and proficiency requirements as suggested by GVNW. We find that such concerns are better resolved through negotiation and arbitration.

i. Allowing Virtual Collocation in Lieu of Physical

(1). Background

599. Section 251(c)(6) requires that incumbent LECs provide physical collocation unless the carrier "demonstrates to the state commission that physical collocation is not practical for technical reasons or because of space limitations . . . ."[1450] In the NPRM, we sought comment on whether the Commission should establish guidelines for states to apply

[1449] GVNW comments at 10; *accord* Rural Tel. Coalition comments at 31.

[1450] 47 U.S.C.§ 251(c)(6).

when determining whether physical collocation is not practical for "technical reasons or because of space limitations."[1451]

(2). Comments

600. Pacific Telesis argues that national standards to determine whether physical collocation is not practical at a specific LEC location are unnecessary. It further argues that "reduced reliability or other harm to the network" should be considered a technical reason that justifies refusal to allow physical collocation.[1452] IXCs and CAPs assert that the burden of showing that physical collocation is not practical should fall on the incumbent LEC.[1453] AT&T contends that an incumbent LEC should be required to show that there is no practical way of providing additional space before it is relieved of its obligation to provide physical collocation. If physical collocation is genuinely not practical, then AT&T argues that the incumbent should provide trunking at no cost to allow the entrant to interconnect.[1454] Time Warner asserts that, where physical collocation is not possible in a LEC central office, LECs should supply a substitute at cost.[1455] State commissions that comment on this issue generally oppose strict national rules and argue that, to the extent such rules are adopted, they should allow the states maximum flexibility.[1456]

601. Time Warner also asserts that the FCC should require LECs to offer a $1 sale and repurchase option for virtually collocated equipment.[1457] The Independent Cable and Telecommunications Association argues that incumbent LECs should be required to provide virtual collocation that is equal in all functional aspects to physical collocation in order to

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[1451] NPRM para. 72.

[1452] PacTel comments at 39.

[1453] *See, e.g.*, Hyperion comments at 14; ACSI comments at 16; AT&T comments at 41.

[1454] AT&T comments at 41-42.

[1455] Time Warner comments at 36, 40.

[1456] *See, e.g.*, Texas Commission comments at 14; Pennsylvania Commission comments at 22; Oregon Commission comments at 23.

[1457] Time Warner comments at 38.

avoid prejudicing small entities that may not have sufficient market share to justify a physical collocation arrangement.[1458]

(3). Discussion

602. Section 251(c)(6) clearly contemplates the provision of virtual collocation when physical collocation is not practical for technical reasons or because of space limitations.[1459] Section 251(c)(6) requires the incumbent LEC to demonstrate to the state commission's satisfaction that there are space limitations on the LEC premises or that technical considerations make collocation impractical. Because the space limitations and technical practicality issues will vary considerably depending on the location at which competitor equipment is to be collocated, we find that these issues are best handled on a case-by-case basis, as they were under our *Expanded Interconnection* requirements.[1460] In light of our experience in the *Expanded Interconnection* proceeding, we require that incumbent LECs provide the state commission with detailed floor plans or diagrams of any premises where the incumbent alleges that there are space constraints. Submission of floor plans will enable state commissions to evaluate whether a refusal to allow physical collocation on the grounds of space constraints is justified. We also find that the approach detailed by AT&T in its July 12 *Ex Parte* submission to be useful and believe that state commissions may find it a valuable guide.[1461]

603. Although section 251(c)(6) provides that incumbent LECs are not required to provide physical collocation where impractical for technical reasons or because of space limitations, our experience in the *Expanded Interconnection* proceeding has not demonstrated that technical reasons, apart from those related to space availability, are a significant impediment to physical collocation. We therefore decline to adopt any rules for determining when physical collocation should be deemed impractical for technical reasons.

604. Incumbent LECs are allowed to retain a limited amount of floor space for defined future uses. Allowing competitive entrants to claim space that incumbent LECs had

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[1458] ICTA reply at 13.

[1459] 47 U.S.C § 251(c)(6).

[1460] *See Special Access Order*, 7 FCC Rcd 7407.

[1461] AT&T describes a detailed proposed showing that would be required of an incumbent LEC that claims physical collocation is not practical because of space exhaustion. The proposed showing would require the specific identification of the space on incumbent LEC premises that is used for various purposes, as well as specific plans for rearrangement/expansion and identification of steps taken to avoid exhaustion. AT&T July 12, 1996 *Ex Parte*.

specifically planned to use could prevent incumbent LECs from serving their customers effectively.[1462] Incumbent LECs may not, however, reserve space for future use on terms more favorable than those that apply to other telecommunications carriers seeking to hold collocation space for their own future use.[1463]

605. We decline to adopt AT&T's suggestion that incumbent LECs should be required to lease additional space or provide trunking at no cost where they have insufficient space for physical collocation.[1464] In light of the availability of substitute virtual collocation arrangements, we find that requiring the type of "substitute" for physical collocation as advocated by AT&T is unnecessary. We similarly reject Time Warner's suggestion that incumbent LECs supply a "substitute" for physical collocation at cost, except to the extent we require virtual collocation. On the other hand, we will require incumbent LECs with limited space availability to take into account the demands of interconnectors when planning renovations and leasing or constructing new premises, as we have in the *Expanded Interconnection* proceeding.[1465]

606. Incumbent LECs are not required to provide collocation at locations where it is not technically feasible to provide virtual collocation. Although space constraints are a concern normally associated with physical collocation, given our broad reading of the term "premises,"[1466] we find that space constraints could preclude virtual collocation at certain LEC premises as well. State commissions will decide whether virtual collocation is technically feasible at a given point. We do, however, require that incumbent LECs relinquish any space held for future use before denying virtual collocation due to a lack of space unless the incumbent can prove to a state commission that virtual collocation at that point is not technically feasible. Moreover, when virtual collocation is not feasible, we require that incumbent LECs provide other forms of interconnection and access to unbundled network elements to the extent technically feasible.[1467]

[1462] *Special Access Order*, 7 FCC Rcd at 7409.

[1463] *See supra*, Section VI.B.1.e.

[1464] *See* AT&T comments at 41-42.

[1465] *See Special Access Order*, 7 FCC Rcd at 7408.

[1466] *See supra*, Section VI.B.1.c.

[1467] *See supra*, Section VI.A.

607. Finally, we decline to require that incumbent LECs provide virtual collocation that is equal in all functional aspects to physical collocation. Our *Expanded Interconnection* rules required a variety of standards for the virtual collocation and have been largely successful. In addition, Congress was aware of the differences between virtual and physical collocation when it adopted section 251(c)(6), and this section does not specify any requirements for virtual collocation.[1468] As discussed above, we adopt the *Expanded Interconnection* requirements for virtual collocation under section 251.[1469] We find, however, that a standard simply requiring equality in all functional aspects could be difficult to administrate and could lead to substantial disputes. We also decline to adopt the suggestion that we require LECs to offer virtual collocation under the "$1 sale and repurchase option."[1470] We do not find evidence that such a specific requirement is necessary at this time. We reserve the right to revisit these issues in the future, however, if we perceive that smaller entities would be disadvantaged by our existing standards.

2. Legal Issues

a. Relationship between *Expanded Interconnection* Tariffs and Section 251

(1). Background

608. The enactment of sections 251 and 252 raises the question of whether, and to what extent, the interconnection, access to unbundled network element, and collocation requirements set forth in those sections, and the delegation of specific rate-setting authority to the states under section 252(d)(1), as a matter of law supplant our section 201 *Expanded Interconnection* requirements. We tentatively concluded in the NPRM that our existing *Expanded Interconnection* policies for interstate special access and switched transport should continue to apply.[1471]

(2). Comments

[1468] *See Remand Order, 9 FCC Rcd* at 5166-69.

[1469] *See supra*, Section VI.B.1.a.

[1470] This configuration is described as involving "the acquisition by the interconnectors of the equipment to be dedicated for interconnectors' use on the LEC premises and the sale of that equipment to the LECs for a nominal $1 sum while maintaining a repurchase option." Time Warner comments at 42.

[1471] NPRM at para. 73.

609. Although commenting parties have not addressed this question directly, some commenters appear to assume that LECs will be required to continue to tariff their collocation offerings with the FCC, as currently required under *Expanded Interconnection*.[1472] Other parties appear to assume that requirements to file federal tariffs are inconsistent with, and superseded by, the negotiation and arbitration provisions in section 252.

(3). Discussion

610. Our *Expanded Interconnection* rules require the largest incumbent LECs to file tariffs with the Commission to offer collocation to parties that wish to terminate interstate special access and switched transport transmission facilities. Section 252 of the 1996 Act, on the other hand, provides for interconnection arrangements rather than tariffs, for review and approval of such agreements by state commissions rather than the FCC, and for public filing of such agreements. Section 252 procedures, however, apply only to "request[s] for interconnection, services, or network elements *pursuant to section 251*."[1473] Such procedures do not, by their terms, apply to requests for service under section 201. Moreover, section 251(i) expressly provides that "[n]othing in this section shall be construed to limit or otherwise affect the Commission's authority under section 201,"[1474] which provided the statutory basis for our *Expanded Interconnection* rules. Thus, we find that the 1996 Act, as a matter of law, does not displace our *Expanded Interconnection* requirements, and, in fact, grants discretion to the FCC to preserve our existing rules and tariffing requirements to the extent they are consistent with the Communications Act.

611. We further conclude that it would make little sense to find that sections 251 and 252 supersede our *Expanded Interconnection* rules, because the two sets of requirements are not coextensive. For example, our *Expanded Interconnection* rules encompass collocation for interstate purposes for all parties, including non-carrier end users, that seek to terminate transmission facilities at LEC central offices.[1475] In comparison, section 251 requires collocation only for "any requesting telecommunications carrier."[1476] Certain competing carriers -- and non-carrier customers not covered by section 251 -- may prefer to take

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[1472] *See, e.g.*, MFS comments at 32; MCI comments at 58.

[1473] 47 U.S.C § 252(a)(1) (emphasis added).

[1474] Section 201 authorizes the Commission "to establish physical connections with other carriers . . ." 47 U.S.C. 201.

[1475] *Special Access Order*, 7 FCC Rcd at 7403.

[1476] *See* 47 U.S.C. § 251(c)(2) and (3).

interstate expanded interconnection service under general interstate tariff schedules. We find that it would be unnecessarily disruptive to eliminate that possibility at this time. We also conclude that permitting requesting carriers to seek interconnection pursuant to our *Expanded Interconnection* rules as well as section 251 is consistent with the goals of the 1996 Act to permit competitive entry through a variety of entry strategies. Thus, a requesting carrier would have the choice of negotiating an interconnection agreement pursuant to sections 251 and 252 or of taking tariffed interstate service under our *Expanded Interconnection* rules.

612. Finally, we expect that, over time, sections 251 and 252 and our implementing rules may replace our *Expanded Interconnection* rules as the primary regulations governing interconnection for carriers. We note that section 251 is broader than our *Expanded Interconnection* requirements in certain respects. For example, section 251 requires incumbent LECs to offer collocation for purposes of accessing unbundled network elements, whereas our *Expanded Interconnection* rules require collocation only for the provision of interstate special access and switched transport.[1477] In addition, section 251(c)(6) requires incumbents to offer physical collocation subject to certain exceptions, whereas our existing *Expanded Interconnection* rules only require carriers to offer virtual collocation, although they may choose to offer physical collocation under Title II regulation in lieu of virtual collocation. In the future, we may review the need for a separate set of *Expanded Interconnection* requirements and revise our requirements if necessary. We believe that this approach is consistent with Congress' determination that the need for federal regulations will likely decrease as the provisions of the 1996 Act take effect and competition develops in the local exchange and exchange access markets.[1478]

b. Takings Issues

(1). Background

613. In *Bell Atlantic v. FCC*, the U.S. Court of Appeals for the D.C. Circuit found that the Commission lacked authority under the Communications Act to impose physical collocation on the LECs. The court found that this requirement implicated the Fifth Amendment takings clause.[1479] On remand, the Commission required LECs to provide virtual

[1477] *See Special Access Order*, 7 FCC Rcd 7369; *Switched Transport Order*, 8 FCC Rcd 7372.

[1478] *See, e.g.*, 47 U.S.C. § 161 (requiring the Commission to "review all regulations . . . in effect at the time of the review that apply to the operations or activities of any provider of telecommunications service.").

[1479] *See Bell Atlantic v. FCC*, 24 F.3d 1441 (D.C. Cir. 1994).

collocation. In *Pacific Bell v. FCC*,[1480] several LECs challenged the Commission's virtual collocation rules on essentially identical grounds, claiming that the virtual collocation rules also constituted an unauthorized taking. The court did not reach the merits of these claims. Instead, addressing the scope of section 251 immediately following enactment and before the FCC had yet exercised its interpretive authority with respect to the provision, the court stated that regulations enacted to implement the 1996 Act would render moot questions regarding the future effect of the virtual collocation order under review. The court did not vacate the order, but remanded to the Commission the issues presented in that case.[1481]

(2). Comments

614. U S West and BellSouth argue that virtual collocation is a taking and that the Commission lacks authority under section 201 to require virtual collocation under its *Expanded Interconnection* rules.[1482] U S West also argues that the Commission lacks authority to require virtual collocation under section 251.[1483] Some incumbent LECs and the Florida Commission also argue that physical collocation amounts to a taking in violation of the Fifth Amendment.[1484] In opposition, several competitive carriers argue that rates that recover incremental costs of collocation will satisfy constitutional "just compensation concerns."[1485]

(3). Discussion

615. We conclude that the ruling in *Bell Atlantic* does not preclude the rules we are adopting in this proceeding. The court in *Bell Atlantic* did not hold that an agency may never "take" property; the court acknowledged that, as a constitutional matter, takings are unlawful

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[1480] 81 F.3d 1147 (D.C. Cir. 1996).

[1481] *Id.*

[1482] U S West comments at 29-30; BellSouth comments at 25.

[1483] U S West comments at 30.

[1484] ALLTEL comments at 9; GTE comments at 66-68; US West comments at 29-31; Florida Commission comments at 15 (readoption of old physical collocation rules would be invalidated as a taking but should be readopted as model rules for the states to adopt if they chose).

[1485] MFS reply at 23; ACSI reply at 8-9; GST reply 14; ALTS reply at 8-11.

only if they are not accompanied by "just compensation."[1486] Instead, the court simply said that the Communications Act of 1934 should not be construed to permit the FCC to take LEC property without *express* authorization. Because the court concluded that mandatory physical collocation would likely constitute a taking,[1487] and that section 201 of the Act did not expressly authorize physical collocation, the court held that the Commission was without authority under section 201 to impose physical collocation requirements on LECs.[1488]

616. The question of statutory authority to impose (physical or virtual) collocation obligations on incumbent LECs largely evaporates in the context of the 1996 Act. New section 251(c)(6) *expressly* requires incumbent LECs to provide physical collocation, absent space or technical limitations. Where such limitations exist, the statute *expressly* requires virtual collocation. Thus, under the court's analysis in *Bell Atlantic*, there is no warrant for a narrowing construction of section 251 that would deny us the authority to require either form of collocation. Moreover, for the reasons stated in the *Virtual Collocation Order*,[1489] we continue to believe that virtual collocation, as we have defined it, is not a taking, and that our authority to order such collocation (under either section 251 or section 201) is not subject to the strict construction canon announced in *Bell Atlantic*.

617. Given that we now have express statutory authority to order physical and virtual collocation pursuant to section 251, any remaining takings-related issue necessarily is limited to the question of just compensation. As discussed in Section VII.B.2.a.(3).(c), below, we find that the ratemaking methodology we are adopting to implement the collocation obligations under section 251(c) is consistent with congressional intent and fully satisfies the just compensation standard. There is, therefore, no merit to the LECs' Fifth Amendment-based claims.

[1486] *Bell Atlantic*, 24 F.3d at 1445.

[1487] The Commission maintains the position that mandatory physical collocation should not properly be seen to create a takings issue. *See Remand Order*, 9 FCC Rcd at 5169.

[1488] *See Bell Atlantic*, 24 F.3d at 1447 ("we hold that the Act does not expressly authorize an order of physical co-location and thus the Commission may not impose it.").

[1489] *See* 9 FCC Rcd at 5161-66.

VII. PRICING OF INTERCONNECTION AND UNBUNDLED ELEMENTS

A. Overview

618. The prices of interconnection and unbundled elements, along with prices of resale and transport and termination, are critical terms and conditions of any interconnection agreement. If carriers can agree on such prices voluntarily without government intervention, these agreements will be submitted directly to the states for approval under section 252. To the extent that the carriers, in voluntary negotiations, cannot determine the prices, state commissions will have to set those prices. The price levels set by state commissions will determine whether the 1996 Act is implemented in a manner that is *pro-competitor* and favors one party (whether favoring incumbents or entrants) or, as we believe Congress intended, *pro-competition*. As discussed more fully in Section II.D. above, it is therefore critical to implementing Congress's pro-competitive, de-regulatory national policy framework to establish among the states a common, pro-competition understanding of the pricing standards for interconnection and unbundled elements, resale, and transport and termination. While such a common interpretation might eventually emerge through judicial review of state arbitration decisions, we believe that such a process could delay competition for years and require carriers to incur substantial legal costs.[1490] We therefore conclude that, to expedite the development of fair and efficient competition, we must set forth rules now establishing this common, pro-competition understanding of the 1996 Act's pricing standards. Accordingly, the rules we adopt today set forth the methodological principles for states to use in setting prices. This section addresses interconnection and unbundled elements, and subsequent sections address resale and transport and termination, respectively.

619. While every state should, to the maximum extent feasible, immediately apply the pricing methodology for interconnection and unbundled elements that we set forth below, we recognize that not every state will have the resources to implement this pricing methodology immediately in the arbitrations that will need to be decided this fall. Therefore, so that competition is not impaired in the interim, we establish default proxies that a state commission shall use to resolve arbitrations in the period before it applies the pricing methodology. In most cases, these default proxies for unbundled elements and interconnection are ceilings, and states may select lower prices. In one instance, the default proxy we establish is a price range. Once a state sets prices according to an economic cost study conducted pursuant to the cost-based pricing methodology we outline, the defaults cease to apply. In setting a rate pursuant to the cost-based pricing methodology, and especially when setting a rate above a default proxy ceiling or outside the default proxy range, the state must give full and fair effect to the economic costing methodology we set forth in this Order and must create a factual record, including the cost study, sufficient for purposes of review after notice and opportunity for the affected parties to participate.

[1490] For a discussion of our legal authority to adopt national pricing rules, *see supra*, Section II.D.

620. In the following sections, we first set forth generally, based on the current record, a cost-based pricing methodology based on forward-looking economic costs, which we conclude is the approach for setting prices that best furthers the goals of the 1996 Act. In dynamic competitive markets, firms take action based not on embedded costs, but on the relationship between market-determined prices and forward-looking economic costs. If market prices exceed forward-looking economic costs, new competitors will enter the market. If their forward-looking economic costs exceed market prices, new competitors will not enter the market and existing competitors may decide to leave. Prices for unbundled elements under section 251 must be based on cost under the law, and that should be read as requiring that prices be based on forward-looking economic costs. New entrants should make their decisions whether to purchase unbundled elements or to build their own facilities based on the relative economic costs of these options. By contrast, because the cost of building an element is based on forward-looking economic costs, new entrants' investment decisions would be distorted if the price of unbundled elements were based on embedded costs. In arbitrations of interconnection arrangements, or in rulemakings the results of which will be applied in arbitrations, states must set prices for interconnection and unbundled network elements based on the forward-looking, long-run, incremental cost methodology we describe below. Using this methodology, states may not set prices lower than the forward-looking incremental costs directly attributable to provision of a given element. They may set prices to permit recovery of a reasonable share of forward-looking joint and common costs of network elements.[1491] In the aftermath of the arbitrations and relying on the state experience, we will continue to review this costing methodology, and issue additional guidance as necessary.

621. We reject various arguments raised by parties regarding the recovery of costs other than forward-looking economic costs in section 251(c)(2) and (c)(3) prices, including the possible recovery of: (1) embedded or accounting costs in excess of economic costs; (2) incumbent LECs' opportunity costs; (3) universal service subsidies; and (4) access charges. As discussed in Section VII.B.2.a. below, certain portions of access charges may continue to be collected for an interim period in addition to section 251(c)(3) prices.

622. With respect to prices developed under the forward-looking, cost-based pricing methodology, we conclude that incumbent LECs' rates for interconnection and unbundled elements must recover costs in a manner that reflects the way they are incurred. We adopt certain rules that states must follow in setting rates in arbitrations. These rules are designed to ensure the efficient cost-based rates required by the 1996 Act.

623. In the next section of the Order, we establish default proxies that states may elect to use prior to utilizing an economic study and developing prices using the cost-based pricing methodology. We recognize that certain states may find it difficult to apply an

[1491] We define these and other forward-looking cost concepts *infra*, Section VII.B.2.a. We define what we consider to be a reasonable share of forward-looking joint and common costs *infra*, Section VII.B.2.a.

economic costing methodology within the statutory time frame for arbitrating interconnection disputes. We therefore set forth default proxies that will be relatively easy to apply on an interim basis to interconnection arrangements. We discuss with respect to particular unbundled elements the reasonable rate structure for those elements and the particular default proxies we are establishing for use pending our adoption of a generic forward-looking cost model. Finally, we discuss the following additional matters: generic forward-looking costing models that we intend to examine further by the first quarter of 1997 in order to determine whether any of those models, with modifications, could serve as better default proxies; the future adjustment of rates; the relationship of unbundled element prices to retail prices; and the meaning of the statutory prohibition against discrimination in sections 251 and 252.

624. Those states that have already established methodologies for setting interconnection and unbundled rates must review those methodologies against the rules we are adopting in this Order. To the extent a state's methodology is consistent with the approach we set forth herein, the state may apply that methodology in any section 252 arbitration. However, if a state's methodology is not consistent with the rules we adopt today, the state must modify its approach. We invite any state uncertain about whether its approach complies with this Order to seek a declaratory ruling from the Commission.

B. Cost-Based Pricing Methodology

625. As discussed more fully in Section II.D. above, although the states have the crucial role of setting specific rates in arbitrations, the Commission must establish a set of national pricing principles in order to implement Congress's national policy framework. For the reasons set forth in the preceding section and as more fully explained below, we are adopting a cost-based methodology for states to follow in setting interconnection and unbundled element rates. In setting forth the cost-based pricing methodology for interconnection and access to unbundled elements, there are three basic sets of questions that must be addressed. First, does the 1996 Act require that the same standard apply to the pricing of interconnection provided pursuant to section 251(c)(2), and unbundled elements provided pursuant to section 251(c)(3)? Second, what is the appropriate methodology for establishing the price levels for interconnection and for each unbundled element, how should costs be defined, and is the price based on economic costs, embedded costs, or other costs? Third, what are the appropriate rate structures to be used to set prices designed to recover costs, including a reasonable profit? We address each of these questions in the following sections.

1. Application of the Statutory Pricing Standard

a. Background

626. In the NPRM, we proposed that any pricing principles we adopt should be the same for interconnection and unbundled network elements because sections 251(c)(2) and (c)(3) and 252(d)(1) use the same pricing standard.[1492] We invited parties to comment on this issue and to justify any proposed distinction in the pricing for interconnection and unbundled network elements. We also stated our belief that the same pricing rules that apply to interconnection and unbundled network elements should also apply to collocation under section 251(c)(6) of the 1996 Act.

b. Comments

627. Commenters generally agree that any pricing rules adopted by the Commission for interconnection and unbundled elements should be the same.[1493] These parties assert that any pricing rules the Commission ultimately adopts should not, therefore, create incentives to substitute or arbitrage one type of classification for another. Commenters also generally agree that the pricing rules the Commission adopts for interconnection and unbundled elements should also apply to collocation.[1494] Many of these parties agree that collocation is a subset of the interconnection arrangements contemplated by sections 251(c)(2) and 252(d)(1).[1495] On the other hand, a few parties contend that the pricing standards contained in section 252(d)(1) for interconnection and unbundled elements do not apply to collocation provided under section 251(c)(6).[1496] BellSouth argues that the Commission should not adopt any national standards for virtual collocation.[1497] Other commenters, including some that oppose the establishment of

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[1492] NPRM at para. 122.

[1493] *See, e.g.*, Citizens Utilities comments at 16 n.14; Ohio Commission comments at 42; Teleport comments at 46.

[1494] *E.g.*, ACSI comments at 16; ALTS comments at 34-35; Citizens Utilities comments at 16 n.14; Colorado Commission comments at 34; MCI comments at 54, 61; MFS comments at 30; NEXTLINK comments at 26; PacTel comments at 63; Sprint comments at 42; Teleport comments at 46.

[1495] *See, e.g.*, Citizens Utilities comments at 16 n.14; Colorado Commission comments at 34; MFS comments at 30; NEXTLINK comments at 26.

[1496] *See, e.g.*, SNET comments at 24 n.44.

[1497] BellSouth comments at 23.

pricing rules by the Commission, argue that, to the extent that the Commission adopts national standards for collocation, they should generally follow those established in the Commission's *Expanded Interconnection* proceeding in CC Docket No. 91-141.[1498]

c. Discussion

628. Sections 251(c)(2) and (c)(3) impose an identical duty on incumbent LECs to provide interconnection and access to network elements "on rates, terms, and conditions that are just, reasonable, and nondiscriminatory."[1499] In addition, both interconnection and unbundled network elements are made subject to the same pricing standard in section 252(d)(1). Based on the plain language of sections 251(c)(2), (c)(3), and section 252(d)(1), we conclude that Congress intended to apply the same pricing rules to interconnection and unbundled network elements. The pricing rules we adopt shall, therefore, apply to both.

629. We further conclude that, because section 251(c)(6) requires that incumbent LECs provide physical collocation on "rates, terms, and conditions that are just, reasonable, and nondiscriminatory," which is identical to the standard for interconnection and unbundled elements in sections 251(c)(2) and (c)(3), collocation should be subject to the same pricing rules.[1500] We also note that, because collocation is a method of obtaining interconnection and access to unbundled network elements, collocation is properly treated under the same pricing rules. This legal conclusion that there should be a single set of pricing rules for interconnection, unbundled network elements, and collocation provides greater consistency and guidance to the industry, regulators, and the courts. Moreover, it reduces the regulatory burdens on state commissions of developing and applying different pricing rules for collocation, interconnection, and unbundled network elements. We note that our adoption of this single set of pricing rules should minimize regulatory burdens, conflicts, and uncertainties associated with multiple, and possibly inconsistent rules, thus facilitating competition on a reasonable and efficient basis minimizing the economic impact of our rules for all parties, including small entities and small incumbent LECs.[1501]

[1498] *See, e.g.*, Bell Atlantic comments at 32-34.

[1499] 47 U.S.C. § 251(c)(2), (c)(3).

[1500] *See supra*, Section VI.B.

[1501] *See* Regulatory Flexibility Act, 5 U.S.C. §§ 601 *et seq.*

2. Rate Levels

a. Pricing Based on Economic Cost

(1) Background

630. We observed in the NPRM that economists generally agree that prices based on forward-looking long-run incremental costs (LRIC) give appropriate signals to producers and consumers and ensure efficient entry and utilization of the telecommunications infrastructure.[1502] We noted, however, that there was a lack of general agreement on the specifics of methodology for deriving prices based on LRIC or total service long-run incremental cost (TSLRIC). We invited parties to comment on whether we should require the states to employ a LRIC-based pricing methodology and to explain with specificity the costing methodology they support.[1503] We recognized, however, that prices based on LRIC might not permit recovery of forward-looking costs if there were significant forward-looking joint and common costs among network elements.[1504] We sought comment on how, if rates are set above incremental cost, to deal with the problems inherent in allocating common costs and any other overheads.[1505] We observed that, by defining the unbundled elements at a sufficiently aggregated level, it may be possible to reduce the costs to be allocated as joint and common by identifying a substantial portion of costs as incremental to a particular element. To the extent that joint and common costs cannot be entirely eliminated, we sought comment on various methodologies for assigning them, including the use of a fixed allocator or on the basis of inverse demand elasticity. We also sought comment on whether, regardless of the method of allocating common costs, we should limit rates to levels that do not exceed stand-alone costs.[1506] Finally, we invited parties to comment on whether a LRIC-based methodology would establish a price for interconnection and unbundled network elements that includes a reasonable profit and thus complies with section 252(d)(1).[1507]

631. A number of states already employ, or have plans to utilize, some form of LRIC

[1502] NPRM at para. 124.

[1503] *Id.* at para. 126.

[1504] *Id.* at para. 129.

[1505] *Id.* at para. 130.

[1506] *Id.* For a definition of stand-alone costs, *see* Section VII.B.2.a. *infra*.

[1507] 47 U.S.C. § 252(d)(1)(A)(i); NPRM at para. 129.

or TSLRIC methodology in their approach to setting prices for unbundled network elements,[1508] with several states choosing LRIC or TSLRIC as a price floor.[1509] For instance, the Connecticut Commission adopted a TSLRIC methodology to measure the cost of service of SNET, its principal incumbent LEC.[1510] Arizona also requires incumbent LECs to conduct TSLRIC cost studies to establish the underlying cost of unbundled services and facilities.[1511] The Ohio Commission has adopted Long Run Service Incremental Cost ("LRSIC"), which is closely related to TSLRIC.[1512] The Missouri and Wyoming Commissions are among a number of state commissions that have not yet adopted a pricing methodology, but are considering LRIC or TSLRIC.[1513] Oklahoma law provides for submission of LRIC cost studies and studies identifying a contribution to common costs for interconnection of facilities and access to network elements to the Oklahoma Commission during an arbitration.[1514] A number of

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[1508] *See, e.g.*, California Commission comments at 29 (California has adopted TSLRIC as the standard for developing the costs of unbundled elements and in a rulemaking this summer will determine the unbundled network elements and what level of shared and common costs should be included in the price of each); Michigan Commission comments at 13 (1996 prices for loops to remain at levels established by the Michigan Commission in its original interconnection order or at TSLRIC); Texas Commission comments at 22 (Texas Commission has employed LRIC-based pricing methodologies for many years; SWBT and GTE required to file LRIC cost studies to be used in pricing not later than November 1, 1996).

[1509] *See, e.g.*, Colorado Commission comments at Attachment (Rules Prescribing Principles for Costing and Pricing of Regulated Services of Telecommunications Service Providers) 4 CCR 723-30, Rules 4-5; Hawaii Administrative Rules, Sections 6-80-32-34 (setting out a three-tiered pricing regime with TSLRIC set as floor for pricing of competitive services); Louisiana Commission comments at Attachment (Louisiana Public Service Commission "Regulations for Competition in the Local Telecommunications Market"), p.30; Washington Commission comments at 25, Appendix B (*Washington Utilities and Transportation Commission v. U S West Communications*, Docket No. UT-950200 at 82 (Washington Commission, April 11, 1996)); Wisconsin Stat. Ann. section 196.204 (requiring the price of each network service or function to exceed TSLRIC).

[1510] Connecticut Commission comments at 4.

[1511] Arizona Commission comments, Exhibit V (Arizona Administrative Code R14-2-1101 *et seq.*), p.10.

[1512] *See* Ohio Commission comments at 43-45.

[1513] *See, e.g.*, Missouri Commission comments at 11 (supports LRIC for costing; LRIC is defined in pending state legislation); Wyoming Commission comments at 26-27 (draft rules propose use of TSLRIC as a price floor, with prices to include a contribution to shared, common, and joint costs, and the sum of prices for unbundled elements not to exceed retail for bundled services; incumbent LECs shall impute the prices of unbundled elements into the price floors of each of their own services that utilize the network elements).

[1514] Oklahoma Commission comments at Appendix A (Corporation Commission Telephone Rules OAC 165:55-17-25), pp.10-11.

states have yet to choose a pricing methodology. For instance, the New York Commission sets prices on a case-by-case basis.[1515] Unbundled element prices also exist in several states pursuant to negotiated interconnection agreements that have either already been approved by state commissions or are under consideration.[1516]

632. Section 252(d)(1) requires, *inter alia*, that rates for interconnection and unbundled network elements be based on "cost (determined without reference to a rate-of-return or other rate-based proceeding)."[1517] We tentatively concluded in the NPRM that this language precludes states from setting rates by use of traditional cost-of service regulation, with its detailed examination of historical carrier investment and expenses.[1518] Instead, we indicated our belief that the statute contemplates the use of other forms of cost-based price regulation, such as the setting of prices based on forward-looking economic cost methodologies (such as LRIC) that do not involve the use of an embedded rate base. We sought comment on whether section 252(d)(1) forecloses consideration of historical or embedded costs or merely prohibits state commissions from conducting a traditional rate-of-return proceeding to establish prices for interconnection and unbundled network elements. Embedded costs are the costs that the incumbent LECs carry on their accounting books that reflect historical purchase prices, regulatory depreciation rates, system configurations, and operating procedures. We invited parties to comment on whether incumbent LECs should be permitted to recover some portion of their historical or embedded costs over TSLRIC.[1519]

633. In the NPRM, we noted that certain incumbent LECs had advocated that interconnection and access to unbundled element prices be based on the "efficient component

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[1515] *Competition, The State Experience* at 80 (compilation of written responses by state commission staffs to questions by FCC staff, compiled by NARUC) (March 8, 1996).

[1516] According to information in our possession, such agreements have been negotiated in, among other states, Alabama, Florida, Georgia, Kentucky, Illinois, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee. Letter from W.W. Jordan, Executive Director -- Federal Regulatory, BellSouth, to William F. Caton, Acting Secretary, July 11, 1996 at Attachment (containing chart detailing agreements between BellSouth and new entrants in Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee); "Interconnection Agreement Under Sections 251 and 252 of the telecommunications Act of 1996, by and between, Ameritech Information Industry Services and MFS Intelenet of Illinois, Inc.," dated May 17, 1996 (filed July 25, 1996).

[1517] 47 U.S.C. § 252(d)(1)(B).

[1518] NPRM at para. 123.

[1519] *Id.* at para. 129.

pricing rule" (ECPR).[1520] Under this approach, an incumbent LEC that sells an essential input element, such as interconnection, to a competing network would set the price of that input element equal to "the input's direct per-unit incremental costs plus the opportunity cost to the input supplier of the sale of a unit of input."[1521] We tentatively concluded in the NPRM that ECPR or equivalent methodologies are inconsistent with the section 252(d)(1) requirement that rates be based on "cost," and we proposed to preclude the states from using this methodology.[1522]

634. Section 254 requires the Commission and the Joint Board established thereunder to ensure that "[a]ll providers of telecommunications service . . . make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service . . . ." That section further provides that "[t]here should be specific, predictable, and sufficient Federal and State mechanisms to preserve and advance universal service."[1523] The Conference Committee also explained that these provisions require any such universal service support payment to be, to the extent possible, "explicit, rather than implicit as many support mechanisms are today."[1524] In the NPRM, we sought comment on whether "it would be consistent with sections 251(d)(1) and 254 for states to include any universal service costs or subsidies in the rates they set for interconnection, collocation, and unbundled network elements."[1525] In particular, we discussed the "play or pay" system adopted by the state of New York in which interconnectors that agree to serve all customers in their self-defined service areas ("players") potentially pay a substantially lower interconnection rate than those that serve only selected customers ("payers") and are, therefore, liable to pay additional contribution charges.[1526] We noted that the statutory schedule for the completion of the

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[1520] *Id.* at para. 147. *See* William J. Baumol, *Some Subtle Issues in Railroad Deregulation*, 10 Int'l J. Trans. Econ. 341 (1983); William Baumol & Gregory Sidak, *Toward Competition in Local Telephony* (1994); William Baumol & Gregory Sidak, *The Pricing of Inputs Sold to Competitors*, 11 Yale J. on Reg. 171 (1994).

[1521] William Baumol & Gregory Sidak, *The Price of Inputs Sold to Competitors*, 11 Yale J. on Reg. 171, 178.

[1522] NPRM at para. 148.

[1523] 47 U.S.C. § 254(b)(4) and (b)(5).

[1524] Joint Explanatory Statement at 130-31. "In keeping with the conferees' intent that universal service support should be clearly identified, [section 254(e)] states that such support should be made explicit." *Id.* at 131; *see also* 47 U.S.C. § 254(e).

[1525] NPRM at para. 145.

[1526] *Id.*

universal service reform proceeding (15 months from the enactment of the 1996 Act) is different from that for this proceeding (6 months from the date of enactment of the 1996 Act). We asked whether the ability of states to take universal service support into account differs pending completion of the section 254 Joint Board proceeding or state universal service proceedings, pursuant to section 254(f), during any transition period that may be established in the section 254 proceeding or thereafter.[1527]

(2) Comments

635. *Forward-Looking Costs.* Most new entrants and IXCs agree that prices for interconnection and unbundled elements should be based on forward-looking, economic costs.[1528] Many state commissions also argue that, if federal pricing rules are adopted, forward-looking methodologies should serve as the basis for establishing rates in a competitive environment.[1529] The Department of Justice contends that pricing above forward-looking economic costs would subject competitors to substantial risk of a price squeeze because the real cost of a network element for the incumbent LEC will be its forward-looking economic cost, while the cost to the new entrant will be the higher price charged for the element by the LEC.[1530] Parties favoring a forward-looking, incremental cost methodology argue that it is the appropriate pricing standard for several reasons. First, such an approach simulates the prices for network elements that would result if there were a competitive market for the provision of such elements to other carriers.[1531] In such a market, these parties argue, competition would drive prices to forward-looking costs, even if such costs were lower than a firm's historical costs.[1532] Second, unbundled element prices based on forward-looking economic costs prevent incumbent LECs from exploiting their market power at the expense of

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[1527] *Id.*

[1528] *See, e.g.*, ACSI comments at 54-55; AT&T comments at 47; Jones Intercable comments at 25-26; LDDS comments at 60; MCI comments at 59, 61; NEXTLINK comments at 27; Sprint comments at 43-44; Teleport comments at 46; Telecommunications Resellers Ass'n comments 38-39; *see also* Ad Hoc Telecommunications Users Committee comments at 31-34; DoJ comments at 27-32; Frontier comments at 21-22; Texas Public Utility Counsel comments at 33-34; Attorneys General reply at 3; NCTA reply at 18-20; NTIA reply at 17-18 n.35.

[1529] *See, e.g.*, New York Commission comments at 3-4; Missouri Commission comments at 11; Kentucky Commission comments at 4-5; Wyoming Commission comments at 27-28; Ohio Commission comments at 41-43.

[1530] DoJ comments at 28-31.

[1531] *See, e.g.*, DoJ comments at 28-29.

[1532] *See, e.g.*, AT&T comments at Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), p.5; DoJ comments at 28-29.

their competitors that are dependent on the incumbent LEC's facilities.[1533] Third, a forward-looking incremental cost methodology creates the right investment incentives for competitive facilities-based entry and creates incentives for the market to move towards competition while preserving opportunities for competition even if some network elements prove to be resistant to competition.[1534] Fourth, a pricing methodology based on forward-looking economic costs minimizes the incumbent LECs' opportunities to engage in anticompetitive cross-subsidization that could delay the emergence of effective competition.[1535] Finally, these parties argue that pricing based on forward-looking economic costs will lead to lower prices for consumers.[1536]

636. While many commenters agree that the proper economic cost standard for interconnection and unbundled elements is one based on forward-looking LRIC, the record indicates a lack of consensus on the precise definition of such a methodology. While many parties, including some incumbent LECs, favor a pricing methodology based on TSLRIC,[1537] others contend that LRIC provides the appropriate basis for pricing interconnection and unbundled elements.[1538] AT&T argues that, because incumbent LECs will be providing access to unbundled network elements and interconnection, and not merely the individual services that use those elements, the relevant question is the incumbent LEC's cost of producing the

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[1533] *See, e.g.*, DoJ comments at 30.

[1534] *See, e.g.*, AT&T comments at Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), p.7; DoJ comments at 29; NCTA comments at Appendix B (Unbundling, Interconnection, and Traffic Exchange: The Pricing of Access to Local Exchange Networks), p. 22.

[1535] *See, e.g.*, DoJ comments at 30-31.

[1536] *See, e.g.*, DoJ comments at 28-31.

[1537] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 34-36; AT&T comments at 47-48; ALTS comments at 35-36; Ameritech comments at 63-64 (but must include recovery of joint, common, and residual costs); CFA/CU comments at 26-32 (including a contribution to joint and common costs); Citizens Utilities comments at 18; Comcast comments at 23; CompTel comments at 67-71; Competition Policy Institute comments at 8; DoJ comments at 28-31 (including any joint and common costs); Frontier comments at 21-22; Intermedia comments at 14; LDDS comments at 56, 62; MCI comments at 60-61; NCTA comments at 49-50; Ohio Consumers' Counsel comments at 24-25 (including a markup over TSLRIC to reflect a reasonable allocation of joint and common costs); SNET reply at 5-7 (including a reasonable contribution to common costs); Sprint comments at 44 (plus a reasonable contribution to joint and common costs), reply at 28-32; TCC comments at 14.

[1538] *See, e.g.*, Texas Statewide Tel. Cooperative comments at 8-11, 14.

entire demand for network elements.[1539] Because TSLRIC defines a cost increment relative to a hypothetical situation in which the supplier does not currently provide the network element at all and thus must construct and operate all element-specific facilities necessary to produce the network element, AT&T believes that TSLRIC, unlike LRIC, includes all element-specific fixed costs.[1540]

637. The Consumer Federation of America argues that costs must be analyzed consistently across all major services using the same cost methodology, *i.e.*, individual functionalities or specific capacities must have similar costs across services.[1541] AT&T argues that TSLRIC should exclude all costs attributable to the incumbent LECs' retailing operations, and that all other cost allocations should be competitively-neutral and assigned on an equally proportional basis relative to attributable costs.[1542] ALTS argues that the underlying data from a TSLRIC study should be accessible for purposes of replicating the study methods and comparisons to other public data.[1543] NTIA contends that the Commission should require the states to consider recovery of only those costs that the incumbent can convincingly demonstrate are incurred in service provisioning.[1544] Supporters of a forward-looking economic cost methodology argue that TSLRIC studies can be prepared quickly to establish interconnection and unbundled element prices.[1545]

638. Incumbent LECs generally oppose the adoption of a forward-looking, long-run incremental costing methodology.[1546] At least five major reasons are offered in opposition. First, opponents of a forward-looking, long-run incremental costing methodology argue that setting the price of each discrete service based on LRIC will not recover the total costs of the

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[1539] AT&T comments at 47, Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), pp.6.

[1540] *Id.* at 48.

[1541] CFA/CU comments at 32.

[1542] AT&T comments at 61-62, 64-65.

[1543] ALTS comments at 36-37.

[1544] NTIA reply at 28.

[1545] *See, e.g.*, LDDS comments at 64-65.

[1546] *See, e.g.*, Matanuska comments at 3-4; NYNEX comments at 46-47; PacTel comments at 66-67; TCA comments at 8.

network because if prices are set equal to the cost of the last unit, total revenues will fall short of total costs.[1547] Second, PacTel argues that a forward-looking cost methodology also suffers from the "fallacy of perfect competition" because it does not account for the fact that, while it is true that competition drives the price of every product toward incremental cost, every multi-product firm must have some products priced far enough above incremental cost to recover its total costs and return a profit to investors.[1548] Third, incumbent LECs argue that setting prices based on the forward-looking economic cost of the element will not create incentives for new entrants to build their own facilities,[1549] and will discourage efficient entry and useful investment by both incumbent LECs and their competitors.[1550] Fourth, some opponents of a forward-looking, economic cost methodology contend that such an approach raises significant practical and administrative problems because LRIC studies are expensive to conduct, almost impossible to audit or review particularly for small entities seeking to enter the local exchange market, highly subjective, and the necessary data are under the exclusive control of the party subject to the agreement.[1551] USTA and other commenters also argue that use of LRIC cost studies would fail to capture differences in geographic regions, thereby denying small incumbent LECs a reasonable opportunity to recover their costs.[1552] Finally, many opponents of a forward-looking, economic cost approach to pricing interconnection and access to unbundled elements argue also that such a methodology precludes any contribution to joint and common costs and does not allow the recovery of historical costs.[1553] These parties contend that network providers must be permitted to recover their total costs of service, including a return on investment and a reasonable allocation of joint, common, and

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[1547] *See, e.g.*, Bell Atlantic comments at Attachment 1 (Affidavit of Jerry A. Hausman), pp.3-4; NECA comments at 8; Rural Tel. Coalition comments at 25.

[1548] PacTel comments at 68-69; *see also* Rural Tel. Coalition reply at 26-27.

[1549] *See, e.g.*, Bell Atlantic comments at 38; SBC comments at 91-92.

[1550] *See, e.g.*, PacTel comments at 70; SBC comments at 90-92; *see also* U S West comments at Exhibit A (Federal Implementation of the Telecommunications Act of 1996: Competition in the Local Exchange), p.9.

[1551] *See, e.g.*, Bell Atlantic comments at Attachment 2 (Declaration of Robert W. Crandall), p.8; MFS comments at 54, reply at 11-12; NECA comments at 8.

[1552] *E.g.*, USTA comments at 45-50; Bay Springs reply at 8.

[1553] *See, e.g.*, BellSouth comments at 56-57; NYNEX comments at 50-52; PacTel comments at 65-66; SBC comments at 88, reply at 24-25; U S West reply at 9, 12 (stating that depreciation expenses should be properly allocated); *see also* NECA comments at 8; TCA comments at 8-9. For a discussion of recovery of joint, common, and embedded costs, *see infra* Section VII.B.2.a.

historical costs.[1554]

639. Incumbent LECs generally contend that costs should be based on the individual incumbent LEC's existing network design and technology instead of the idealized least-cost, most efficient network design and technology.[1555] USTA argues that, if competitors want to use an incumbent LEC's embedded plant, competitors should pay for the existing plant, not some theoretical, more efficient plant.[1556] In addition, these parties argue that, if a new entrant can purchase the unbundled element from the incumbent LEC at a price no higher than the cost of the least-cost, most efficient provider, then the new entrant has little incentive to invest in its own facilities. Ameritech also contends that section 252(d)(1) addresses recovery of the incumbent LEC's costs of providing interconnection and unbundled network elements, not the costs of a hypothetical carrier.[1557]

640. On the other hand, several new entrants argue that a forward-looking economic cost methodology should be based on an efficient provider's costs of producing a service.[1558] These parties contend that, in a competitive market, prices are determined by the cost of efficient potential entrants, not the embedded costs of existing firms.[1559] In addition, a pricing standard based on the costs of the element using the most-efficient technology prevents incumbent LECs from charging competitors for the cost of facilities that would in fact be used in large part by the incumbent LECs themselves to compete in new markets such as

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[1554] *See, e.g.*, Ameritech comments at 60, reply at 30-33 (stating that residual cost recovery must also be permitted); Bell Atlantic comments at 35-36 (stating that the recovery of the total costs of constructing and operating the networks must also be permitted); NYNEX comments at 42-44; USTA comments at Attachment 1 (Affidavit of Jerry A. Hausman), pp.5-6.

[1555] *See, e.g.*, Ameritech reply at 32-33; Bell Atlantic reply at 17-18; Bellsouth reply at 36-37; *see also* GVNW comments at 36; USTA comments at 40, reply at 21-22.

[1556] USTA comments at 40.

[1557] Ameritech reply at 32.

[1558] *See, e.g.*, ACSI comments at 56; AT&T comments at 57-60 (optimally configured and sized assets with current technology and efficient operating practices); AT&T comments at Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), p. 10 (efficient, cost-minimizing competitor); GST comments at 26-27 (costs of an efficient LEC rather than the actual costs of an incumbent LEC); Teleport reply at 30 (best available technology at today's prices); *see also* DoJ reply at 9-11 (best generally available technology); Louisiana Commission comments at 4, 15; Telecommunications Resellers Ass'n comments at 38 (most efficient available technology).

[1559] *See, e.g.*, TCC comments at 17.

interexchange service.[1560] Sprint, however, argues that prices should be based on the incumbent LEC's average utilization and existing network design and technology, not on an idealized network and technology that may bear no relationship to the incumbent LECs existing operations.[1561]

641. USTA, Bell Atlantic, and BellSouth have asserted in various filings and *ex parte* presentations that TSLRIC-based pricing would not properly compensate incumbent LECs for certain factors that affect capital costs and economic depreciation rates.[1562] First, when technological progress lowers equipment costs, the replacement or forward-looking economic cost of certain durable sunk investments can be expected to decline over time. In this case the correct measure of cost over any period of time should include the expected decline in economic value during that period.[1563]

642. Second, these parties argue that, when investments in facilities needed to meet a specific level of demand are sunk and irreversible, an incumbent LEC may not be able to recover these costs over the physical life of the facility, because demand may decrease as new entrants elect to build their own facilities. When entry is possible using current technology, either competition from these entrants, or rate regulation can prevent retail service prices from rising significantly, which will place an effective ceiling on profits. If demand for a service falls in a market in which the incumbent LEC is the only supplier and owner of sunk facilities, however, there will be no corresponding exit of other carriers that will prevent prices and profits from falling. Because of this asymmetric effect of changing market conditions on an incumbent LEC's profits, these parties claim that increasing the uncertainty due to entry in the local exchange market will increase the cost of capital to the incumbent LEC. They then assert that the inability of TSLRIC to account for the risks associated with sunk facilities can lead to understating the true economic cost of an element by a factor of

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[1560] DoJ reply at 10.

[1561] Sprint reply at 31-32.

[1562] USTA reply comments at Attachment 1 (Reply Affidavit of Jerry A. Hausman); Bell Atlantic comments at Attachment 1 (Affidavit of Jerry A. Hausman); Letter from Robert T. Blau, Vice President, Executive and Federal Regulatory Affairs, BellSouth, to William F. Caton, Acting Secretary, FCC, July 25, 1996, at Attachment (Response to Hubbard and Lehr).

[1563] We note that USTA seems to present a contradictory argument regarding the expected effect of this issue -- here Hausman claims that prices will decrease rapidly, whereas in our price cap proceeding, USTA sponsored testimony by Christenson that claimed input prices would generally increase at the rate of inflation. USTA comments in CC Docket No. 94-1, at 25-27.

three.[1564] Finally they assert that empirical research that shows firms' hurdle rates in excess of the market cost of capital shows that the considerations of risk associated with sunk investment significantly raises a firm's cost of capital.[1565]

643. *Joint and Common Costs.* Several incumbent LECs contend that a forward-looking, economic cost methodology does not take into account either joint or common costs.[1566] Although a few parties contend that incumbent LECs do not need a mark-up over TSLRIC to recover joint and common costs because incumbents are presumably already recovering these costs,[1567] commenters generally agree that incumbent LECs should be permitted to recover some measure of forward-looking joint and common costs.[1568] These commenters argue that pricing at incremental cost without joint and common costs is economically inefficient because it permits competitors to offer the incumbent LECs' services without making a contribution to the common costs that the LECs incur in offering the service.[1569] They further contend that excluding recovery of joint and common costs will distort technological decisions because the LEC is encouraged to invest in less efficient technologies that have higher incremental costs and lower common costs, which would tend to destroy economies of scope.[1570] Finally, incumbent LECs fear that they will be forced to increase retail rates to recover these unrecovered common costs, while their competitors that do not face such costs will reduce their own prices and have little incentive to invest in

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[1564] *See* USTA reply at Attachment 1 (Reply Affidavit of Jerry A. Hausman), p.1.

[1565] *Id.* at 7.

[1566] *See, e.g.*, Bell Atlantic comments at Tab 2 (Declaration of Robert W. Crandall), p.9, reply at Attachment 1 (Declaration of Alfred E. Kahn and Timothy J. Tardiff), p.6; BellSouth comments at 51; Municipal Utilities comments at 19-21; SBC reply at 24-25; TDS comments at 18-19.

[1567] *See* Telecommunications Resellers Ass'n comments at 39-40; Texas Public Utility Counsel comments at 19-20; WinStar comments at 29, reply at 9-10.

[1568] *See, e.g.*, Ameritech comments at 60; Bell Atlantic comments at 36; Citizens Utilities comments at 19; Cincinnati Bell comments at 24-25; Colorado Commission comments 45-46; DoJ reply at 6; GTE Comments at 61-62; Kentucky Commission comments at 5; Lincoln Tel. comments at 13; Mass. Commission comments at 11-12; NCTA comments at 49-50; Ohio Consumers' Counsel comments at 24; SBC comments at 91; Sprint comments at 43-44; AT&T reply at 28; NTIA reply at 19-21; USTA reply at 19.

[1569] *E.g.*, BellSouth comments at 52-53; GTE comments at Attachment 3 (Affidavit of Edward C. Beauvais, Ph.D.), p.3.

[1570] *See, e.g.*, BellSouth comments at 53; Lincoln Tel. comments at 13.

facilities of their own.[1571]

644. There is no consensus in the record on the magnitude of the joint and common costs at stake. Although commenters argued that the amount of common costs varies dramatically due to differences in location, network construction, and equipment,[1572] several parties are skeptical that there are significant joint and common costs between network elements given the relative modularity of the network and associated functions.[1573] These parties contend that, if joint and common costs are incurred, incumbent LECs must quantify them so that a state commission can determine whether and precisely how much contribution is needed.[1574] The Department of Justice asserts that, when developing a TSLRIC for unbundled network elements, it is preferable, where possible, to focus on costs of facilities and network elements rather than services that use those facilities in order to arrive at a more accurate determination of economic costs and to reduce the amount of costs that must be treated as joint or common.[1575] The incumbent LECs disagree with the new entrants' characterization of these costs as *de minimis* and argue that there is no evidence that unrecovered joint and common costs are much lower in the TSLRIC rates for physical elements than a TSLRIC standard based on the cost of providing services.[1576]

645. There is considerable disagreement in the record over the appropriate method of allocating joint and common costs under a TSLRIC approach. AT&T contends that the vast majority of the relevant costs will be causally attributed to particular network elements in the calculation of TSLRIC, and that we should prescribe rigid allocators that limit the incumbents' ability to manipulate prices by imposing high markups on new entrants.[1577] This approach, it is argued, is more competitively neutral than Ramsey pricing, which allocates

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[1571] *E.g.*, BellSouth comments at 53-54.

[1572] *See, e.g.*, Municipal Utilities comments at 19-20; NARUC reply at 9.

[1573] *See, e.g.*, AT&T comments at Attachment or Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), pp.13-14; Competition Policy Institute comments at 19; DJ comments at 31-32, reply at 8; Texas Public Utility Counsel comments at 24-25.

[1574] Texas Public Utility Counsel comments at 17-28; Sprint comments at 47-50.

[1575] DoJ reply at 8; *see also* Competition Policy Institute comments at 19.

[1576] *E.g.*, PacTel reply at 27; *see also* Cincinnati Bell reply at 10.

[1577] *See* AT&T comments at 61-62.

costs based on inverse demand elasticity.[1578] In contrast, incumbent LECs advocate allocation of joint and common costs based on inverse demand elasticity,[1579] *i.e.*, according to Ramsey pricing principles.[1580] New entrants and other parties oppose the use of Ramsey pricing for interconnection and unbundled network elements for use in a market that is moving toward competition over the long-run.[1581] They contend that Ramsey pricing enables LECs to shift costs associated with entry into new competitive markets over to captive services.[1582] One state commission responds that the Commission's concern in this regard would be addressed by calculating demand elasticities on the basis of the total industry demand for the service, which would negate the influence of competition on demand elasticities.[1583]

646. Commenters suggested other means of allocating joint and common costs. For example, certain incumbent LECs argue that these costs must not be shifted from interconnection and unbundled elements to residential subscribers,[1584] while certain new entrants suggest that these costs should be recovered at the retail level.[1585] Many new entrants agree that the Commission should require allocation of joint and common costs that minimizes the opportunity for incumbent LECs to harm competitors through strategic pricing.[1586] For example, some new entrants argue that states should be required to minimize allocation of

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[1578] *See, e.g.*, Teleport comments at 47-48.

[1579] *See e.g.*, GTE comments at 63, comments at Attachment 3 (Affidavit of Edward C. Beauvais, Ph.D.), pp.4-6; *see also* Mass. Commission comments at 11-12.

[1580] *See* Frank P. Ramsey, *A Contribution to the Theory of Taxation*, 37 Econ. J. 47 (1927); *see generally* Kenneth E. Train, *Optimal Regulation: The Economic Theory of Natural Monopoly* 115-40 (1992) (discussing efficiency properties of Ramsey prices); Bridger M. Mitchell & Ingo Vogelsang, *Telecommunications Pricing: Theory and Practice* 43-61 (1991).

[1581] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 39-41; CompTel comments at 79-80; MECA comments at 45; Teleport comments at 47-48; Texas Public Utility Counsel comments at 27; WinStar reply at 10-11.

[1582] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 38-39.

[1583] *See, e.g.*, Mass. Commission comments at 12.

[1584] *See, e.g.*, Puerto Rico Tel. comments at 10; Rural Tel. Coalition comments at 27.

[1585] *E.g.*, MCI reply at 9-10.

[1586] *See, e.g.*, MCI reply at 9-10.

joint and common costs to bottleneck or essential network elements.[1587] MCI and Sprint assert that such costs should be spread across all services provided by a carrier in proportion to the TSLRIC for each service.[1588] A few commenters assert that the Commission should adopt a fixed mark-up over TSLRIC for allocation of joint and common costs.[1589] Cable & Wireless supports the adoption of a rule that allocates common costs uniformly for all services offered. It argues that a disproportionate allocation system, that for example, assigns common costs strictly to retail services purchased for resale by small companies, but not to unbundled network elements utilized by larger competitors, would prove detrimental to the development of local competition.[1590] Finally, certain parties suggested that regardless of the method ultimately used to allocate joint and common costs, TSLRIC should serve as the floor[1591] and prices should not exceed stand-alone costs.[1592]

647. *Reasonable Profit.* Commenters disagree over what should constitute a "reasonable profit." Numerous commenters argue that a TSLRIC-based methodology for the pricing of interconnection and unbundled network elements includes a reasonable profit and is, therefore, consistent with the 1996 Act.[1593] These commenters argue that economic

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[1587] *See, e.g.*, LCI comments at 4-5 (even under a TSLRIC methodology, it may be necessary to allocate joint direct costs among classes of service); Time Warner comments at 52-53 (only elements that can be duplicated by competitors or that are already available from other sources should include a reasonable markup over TSLRIC for shared and common costs); *see also* CFA/CU comments at 33-35 (allocation to such elements should be no more than the allocation of such costs to basic service).

[1588] *See* AT&T comments at 64; MCI reply at 9-10; Sprint comments at 47.

[1589] *See, e.g.*, Competition Policy Institute comments at 19 (suggesting an overhead loading of six percent); *see also* Sprint comments at 48-49 (joint and common costs should be no more than 15 percent of TSLRIC).

[1590] Cable & Wireless comments at 35.

[1591] *See, e.g.*, Citizens Utilities comments at 19; Florida Commission comments at 26; SBC comments at 93-94.

[1592] *See, e.g.*, AT&T comments at Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), pp.14-15; TDS comments at 21.

[1593] *See, e.g.*, CompTel comments at 69-70; LDDS comments at 61; MCI comments at 61-62; Texas Public Utility Counsel comments at 19-20; WinStar comments at 29; Ad Hoc Telecommunications Users' Committee reply at Appendix A (Interconnection Pricing Standards for Monopoly Rate Elements in a Potentially Competitive Local Telecommunications Market), p.12.

measures, such as TSLRIC, reflect a reasonable profit by including the cost of capital.[1594] Time Warner and NEXTLINK contend that permitting incumbent LECs to receive a profit above that contained within TSLRIC pricing would provide them with a greater return on facilities than was permitted under rate-of-return regulation by "double-counting" the profit.[1595] Furthermore, NEXTLINK rejects the notion that profit includes the recovery of embedded costs or is a means of recovering subsidies for universal service currently recovered through access charges such as the transport interconnection charge or carrier common line charge, or their intrastate equivalents.[1596] Similarly, LDDS believes that "reasonable profit" cannot be read to include contribution to costs having nothing to do with providing the network elements or interconnection that are the subject of a section 252 pricing standard.[1597]

648. Incumbent LECs, however, contend that setting rates on a TSLRIC-based methodology alone would violate section 252(d)(1) by precluding recovery of a reasonable profit.[1598] NYNEX and USTA state that profit is what a firm makes after it recovers its total costs of providing all of its services, including its investment-related costs.[1599] Ameritech similarly contends that the term "reasonable profit" means the ability to earn positive economic profits as an incentive for efficiency and innovation.[1600] PacTel argues that, in order to allow for a reasonable profit, rates for interconnection and unbundled elements must permit full recovery of historical accounting costs. PacTel charges that the federal courts have held that the determination of a "reasonable profit" should consider the effect on the carrier's whole enterprise and, therefore, the sum of the carrier's rates must enable it to

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[1594] *E.g.*, AT&T reply at 31; CompTel comments at 69-70, reply at 39; DoJ reply at 9; Frontier reply at 12-15; MCI comments at 61-62; Texas Public Utility Counsel comments at 19-20; WinStar comments at 29.

[1595] NEXTLINK comments at 28; Time Warner reply at 31-32.

[1596] NEXTLINK comments at 28-29.

[1597] LDDS comments at 61.

[1598] *See, e.g.*, GTE comments at 60; NYNEX comments at 51-52; PacTel comments at 69; SBC comments at 88; TCA comments at 9; TDS comments at 18; *see also* GTE comments at Attachment 3 (Affidavit of Edward C. Beauvais, Ph.D.), p.9.

[1599] *See* NYNEX comments at 42; USTA comments at 43.

[1600] *See* Ameritech comments at 70-71.

recover its total historical costs.[1601]

649. Several parties contend that the issue of what constitutes a reasonable profit should be left to the states. Citizens Utilities contends that the issue of whether profit is reasonable is a question of fact to be resolved, where necessary, in arbitration proceedings.[1602] Time Warner argues that what constitutes reasonable profit should, as a matter of policy, vary depending on the nature of the facilities or services being provided and should, therefore, be left to the states.[1603] The Illinois Commission argues that states may even use rate-of-return methodologies for the determination of reasonable profit.[1604]

650. There is also disagreement among the commenters regarding the force of the reasonable profit language in section 252. While many incumbent LECs interpret Section 252(d)(1) as *requiring* prices to include a reasonable profit,[1605] certain new entrants and other parties argue that the reasonable profit language is permissive, not mandatory.[1606] For example, several LECs contend that, to avoid confiscation of their property, LECs are entitled to full operating expenses as well as the capital costs of doing business and a reasonable profit.[1607] The Ohio Consumers' Counsel, however, argues that the language of section 252(d)(1) indicates that it is at the discretion of the state commissions to determine whether to allow rates to reflect a reasonable profit.[1608]

651. USTA contends that "purely forward-looking TSLRIC" should not be the price

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[1601] *See* PacTel comments at 65-66, *citing FPC v. Hope Natural Gas*, 320 U.S. 591 (1944) and *Jersey Central Power & Light v. FERC*, 810 F.2d 1168, 1172 (D.C. Cir. 1987).

[1602] Citizens Utilities comments at 17.

[1603] Time Warner comments at 52.

[1604] Illinois Commission reply at 15.

[1605] *See, e.g.*, PacTel comments at 65-66.

[1606] *See, e.g.*, AT&T reply at 31; Cox reply at 29; DoJ reply at 15.

[1607] *See, e.g.*, MECA comments at 44, 49; PacTel comments at 65-67.

[1608] Ohio Consumers' Counsel comments at 26.

for interconnection elements because "telecommunications networks are mostly sunk costs."[1609] It argues that, when investment in facilities requires sunk and irreversible costs, a firm may not be able to recover this investment over the physical life of the facilities due to the risks of decreases in value resulting from future competition. USTA contends that allowing other carriers into the provision of local exchange service will subject incumbent LECs to these types of risks. It then claims that TSLRIC calculations do not appropriately account for these additional risks.

652. USTA also argues that the risks to which the incumbent LECs will be subject as a result of competition in the local exchange market include the risks from facing new competition, technological change, change in demand, and interest rates. It further argues that these risks will result in many situations in which the incumbent LECs may face a reduction in profits (downside risk) and no situations in which the incumbent LECs may see an increase in their profits. Thus, incumbent LECs must be compensated for these additional risks, according to USTA. It concludes that TSLRIC calculations fail to provide this compensation, stating "TSLRIC can be biased downward by a factor of three."[1610]

653. Similarly, Bell Atlantic asserts that, in a market where input prices are declining, a TSLRIC standard is not the appropriate standard because, "in a world of continual technological progress, it would be irrational for firms constantly to update their facilities in order completely to incorporate today's lowest-cost technology."[1611] Thus, it argues that because a carrier would not replace its entire existing set of facilities (a sunk investment) with the best available technology at a given point, the price of the best available technology understates the cost of providing service.[1612]

654. The Consumer Federation of America, disputing the incumbent LECs' claims regarding risk premiums, argues that risk premiums are reflected in the large returns incumbent LECs have already earned.[1613]

655. *Embedded Costs.* IXCs, competitive local entrants, and others interpret section

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[1609] *See* USTA reply at Attachment 1 (Reply Affidavit of Professor Jerry A. Hausman), p.1.

[1610] *Id.* at 6. Presumably, by TSLRIC, Professor Hausman is referring to a TSLRIC assuming a risk free rate of return and a depreciation rate that encompasses the physical life of assets.

[1611] Bell Atlantic reply at Exhibit 1 (Declaration of Alfred E. Kahn and Timothy J. Tardiff), para.8a.

[1612] *Id.*

[1613] *See* CFA/CU comments at 61-63.

251(d)(1) as precluding states from setting rates by use of traditional cost-of-service regulation, with its detailed examination of historical accounting costs and reliance on an embedded rate base.[1614] These parties argue that some measure of forward-looking economic costs, not historical costs, should be the only basis for setting rates for interconnection and unbundled network elements because only forward-looking economic costs meet the statutory requirement in section 252(d)(1) that such rates be "determined without reference to a traditional rate-of-return or other rate-based proceeding." Potential new entrants and many other commenters argue that historical or embedded costs should not be included in the prices of interconnection and unbundled network elements.[1615] NTIA asserts that it is unwise to include in the prices for interconnection and unbundled elements an amount to recover historical costs when the size of any shortfall between historical costs and TSLRIC's forward-looking costs will not be determined for many years after interLATA entry.[1616] These parties contend that permitting incumbent LECs to recover embedded costs in the prices they charge competitors for interconnection and unbundled network elements, while the incumbents experience much lower incremental costs, will result in inefficiently high prices that will either cause new entrants to over-build existing systems instead of maximizing the efficient use of the existing incumbent LEC's network, or discourage entry and investment in the local markets altogether.[1617] Moreover, opponents of embedded cost recovery maintain that these costs reflect past inefficiencies and their recovery does not create any incentive for incumbent LECs to maximize their network and operational efficiencies.[1618] Commenters also argue that embedded cost recovery permits incumbents to engage in anticompetitive, strategic,

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[1614] *See, e.g.*, AT&T comments at 47; LDDS comments at 60; MCI comments at 61-62; MFS comments at 59; Sprint comments at 43; Teleport comments at 46; Time Warner comments at 51; Frontier comments at 21; Excel comments at 9; ACSI comments at 54-55; WinStar comments at 37-38; GST comments at 29-30; *see also* Ad Hoc Telecommunications Users Committee comments at 30-31; DoJ comments at 27-32, reply at 14; Kentucky Commission comments at 4; Texas Public Utility Counsel comments at 33-34; Telecommunications Resellers Ass'n comments at 38; Michigan Commission comments at 14; Pennsylvania Commission comments at 29; Ohio Commission comments at 42-43; Attorneys General reply at 7-8.

[1615] *See, e.g.*, AT&T comments at 47; CFA/CU reply at 18-19; DoJ comments at 27-32; N. Economides comments at 3; Frontier comments at 21-22, reply at 13; Jones Intercable comments at 25-26; LDDS comments at 60; MCI comments at 61-62; MFS comments at 59; Michigan Commission comments at 14; Sprint comments at 43; Teleport comments at 46; TCC comments at 15-16; Texas Public Utility Counsel comments at 33-34; Time Warner comments at 51; WinStar comments at 37-38; *see also* Ad Hoc Telecommunications Users' Committee reply at Appendix A (Interconnection Pricing Standards for Monopoly Rate Elements in a Potentially Competitive Local Telecommunications Market), pp.2-6;

[1616] *See* NTIA reply at 28-29.

[1617] *See, e.g.*, Competition Policy Institute comments at 8; TCC comments at 15-16.

[1618] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 53-54.

or discriminatory pricing by manipulating the cost of individual rate elements.[1619]

656. In response to claims that the incumbent LECs are entitled to recover embedded costs incurred as a result of their regulation, opponents of embedded cost recovery argue that, at the state level, incumbent LECs have been opting for incentive-based regulation and so have foregone the right to claim entitlement to recovery of embedded costs in exchange for the flexibility to price their services to meet competition.[1620] AT&T argues that, because the majority of the incumbent LECs' embedded plant was installed after 1990, the forward-looking replacement costs of this old plant may in many cases be higher than the incumbent LECs' embedded costs.[1621] MCI disagrees with incumbent LECs' claims that excluding historical costs will discourage future investment by incumbent LECs and argues instead that incumbent LECs make investment decisions based upon expected future earnings.[1622]

657. Most incumbent LECs and some other parties dispute the claim that historical costs are precluded by the statute,[1623] asserting instead that section 252(d)(1) merely prohibits the use of a rate-of-return *proceeding* to determine such rates.[1624] Incumbent LECs argue that any pricing methodology the Commission adopts should permit recovery of historical or embedded costs in the prices of interconnection and unbundled network elements.[1625] NYNEX specifically proposes a cost-accounting pricing methodology that places the burden on the incumbent LEC to identify the specific accounting data that would be associated with the

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[1619] TCC comments at 15-16

[1620] *See, e.g.*, GST comments at 29-30; WinStar comments at 38.

[1621] *See* AT&T reply at 33. For a detailed discussion, *see* AT&T reply at Appendix C (Affidavit of Lee Selwyn and Patricia Kravtin), pp.1-4.

[1622] *See* MCI reply at 15-16.

[1623] *See, e.g.*, Bell Atlantic comments at 37; BellSouth reply at 35-37; Colorado Commission comments at 34-35; GVNW comments at 35-36; Municipal Utilities comments at 19; NYNEX comments at 46-47; Ohio Consumers' Counsel comments at 23; PacTel comments at 65; Roseville Tel. comments at 6-8; Rural Tel. Coalition comments at 26-28; SBC comments at 88; TDS comments at 17-18; Texas Statewide Telephone Coop. Inc. comments at 7; USTA comments at 40.

[1624] *See, e.g.*, Bell Atlantic comments at 37; Municipal Utilities comments at 19; Ohio Consumers' Counsel comments at 23; Texas Statewide Telephone Coop. comments at 7.

[1625] *See, e.g.*, Alaska Tel. Ass'n comments at 4-5; Ameritech comments at 60; Bell Atlantic comments at 36; Cincinnati Bell comments at 30; Lincoln Tel. comments at 11-12; Roseville Tel. comments at 7-8; SBC comments at 59; SNET comments at 29; USTA comments at 40; *see also* NECA comments at 6, reply at 8-9.

particular type of interconnection requested by the competing carrier under section 251.[1626]

658. USTA cites reports that estimate that embedded costs that would not be recouped under a solely forward-looking pricing methodology are between $13 billion and $18.4 billion.[1627] Incumbent LECs contend that, because incumbent LECs must offset this shortfall of revenues against total costs that is created by a failure to recover embedded costs, they will be discouraged from investing to maintain and upgrade their networks in order to avoid the risk of again being unable to recover embedded costs.[1628] In addition, they argue that they incurred these embedded costs under federal and state regulatory oversight, which imposed on incumbent LECs social policy obligations and uneconomic costing practices, and that they therefore should be permitted to recover them.[1629] Incumbent LECs also assert that past investments were made under the belief that costs would be recovered, and that rates collected in the past did not reflect the risk that embedded costs might not be recovered in future rates.[1630] Several commenters argue that the opportunity to recover embedded costs through rates for interconnection and unbundled elements is particularly important for small and rural incumbent LECs.[1631] Finally, some parties also contend that, if they are not permitted to recover embedded costs, these costs must be recouped elsewhere, thus putting pressure on the states to recover these costs through local rates.[1632]

659. Despite their objections to embedded cost recovery, some non-incumbent parties explain conditions under which some limited recovery should be permitted. For example, MCI argues that, although embedded costs should not be recovered, it would be appropriate to

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[1626] NYNEX comments 54-56, reply at 27.

[1627] USTA comments at 55.

[1628] *See, e.g.*, Bell Atlantic comments at Attachment 1 (Affidavit of Professor Jerry A. Hausman), p.2; Lincoln Tel. comments at 16-17; USTA reply at 23.

[1629] *See, e.g.*, Ameritech reply at 30-31; BellSouth comments at 57; Lincoln Tel. comments at 16-17.

[1630] *See* Bell Atlantic reply at Exhibit 2 (Declaration of Richard A. Epstein), p.4.

[1631] *E.g.*, Home Tel. comments at 4; NECA comments at 9; TCA comments at 8; Texas Statewide Tel. Cooperative, Inc. comments at 9; Bay Springs reply at 10.

[1632] *See, e.g.*, USTA comments at 56; Wyoming Commission comments at 31-32; *see also* New York Commission reply at 9; *cf.*, Alabama Commission comments at 24-25; Texas Commission comments at 23, 26.

allow incumbent LECs to recover any depreciation reserve deficiency,[1633] which MCI estimates is only a small percentage of the residual between existing revenues and the revenues generated by a forward-looking, TSLRIC pricing of unbundled network elements.[1634] The Ad Hoc Telecommunications Users Committee asserts that, at a minimum, any nominal losses in economic value attributed to stranded investment should be weighed against the appreciation in value that incumbent LECs have experienced as reflected in share prices and market-to-book ratios.[1635] The Consumer Federation of America proposes that stranded investment might be recovered through an industry-wide recovery fund, if incumbent LECs can satisfy a rigorous set of showings to ensure that ratepayers are fairly treated.[1636] Finally, AT&T argues that, if the Commission determines that some portion of the residual should be recovered, it should be recovered through a competitively neutral, transitional, funding and distribution mechanism that will not distort competition.[1637]

660. *Opportunity Cost -- ECPR.* Incumbent LECs are the primary advocates for ECPR pricing of interconnection and unbundled network elements.[1638] They argue generally that ECPR is the approach that most closely parallels the method a firm in a competitive market would employ when faced with the opportunity of selling inputs to firms that intend to compete with it in its final product market.[1639] GTE asserts that the ECPR's purpose is to reward efficient entry into the market for the end product by ensuring that the incumbent LEC

[1633] A reserve imbalance exists when the carrier's actual "book" depreciation reserve differs from its "theoretical" reserve, which is the reserve which would exist if service lives and salvage values had been accurately forecast in the past. When the theoretical reserve exceeds the book reserve, the imbalance is a reserve deficiency. For most LECs the reserve imbalance is an overall deficiency. *Amortization of Depreciation Reserve Imbalances of Local Exchange Carriers*, CC Docket No. 87-447, Report and Order, 3 FCC Rcd 984 (1988).

[1634] *See* MCI comments at 73-75.

[1635] Ad Hoc Telecommunications Users Committee comments at 26-27.

[1636] *See* CFA/CU comments at 67-68.

[1637] *See* AT&T comments at 70-73.

[1638] *See, e.g.*, Ameritech comments at 91-93; GTE reply at 36-38; MECA comments at 50-52; PacTel comments at 69-71; SBC comments at Appendix A (Efficient Component Pricing Rule), pp.1-5; *see also* PacTel reply at Appendix C (Declaration of Richard D. Emerson).

[1639] *See, e.g.*, Rural Tel. Coalition reply at 28-30.

sells network access to itself and to its rivals on the same, nondiscriminatory terms.[1640] Thus, GTE claims, the ECPR sets prices for network elements that provide incentives for efficient entry and compensates incumbent LECs for the economic costs associated with sale of such elements.[1641] GTE further argues that ECPR accomplishes these tasks regardless of the market structure and regardless of the presence or absence of economic rents.[1642] SBC argues that the ECPR is equivalent to the avoided cost rule used for setting the prices of resold services and equivalent to the efficient imputation rule for pricing of retail services.[1643] Supporters of ECPR pricing also argue that prices will continue to move toward competitive levels where competition is provided by a more efficient carrier than the incumbent LEC.[1644]

661. New entrants and many other commenters oppose the use of the ECPR to set prices for interconnection and access to unbundled network elements.[1645] These parties argue that ECPR does not comply with the statutory mandate that interconnection and network elements be based on costs. They assert that using ECPR would allow incumbent LECs to retain monopoly rents and protect the incumbent LECs from competitive disciplinary market forces.[1646] Opponents of ECPR contend that ECPR pricing does not replicate a competitive environment, but instead perpetuates inefficient and anticompetitive aspects of the current pricing structure. Other commenters argue that the incumbent LECs may use ECPR to exclude or marginalize a more efficient rival in the complementary market by forcing the rival

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[1640] GTE comments at Attachment 4 (An Empirical Analysis of Pricing Under Sections 251 and 252 of the Telecommunications Act of 1996), p.7.

[1641] *Id.* at p.I-i

[1642] *Id.* at p.III-7.

[1643] SBC comments at Appendix A (Efficient Component Pricing Rule), pp.1-5.

[1644] *See, e.g.*, Ameritech comments at 93; GTE comments at Attachment 4 (An Empirical Analysis of Pricing Under Sections 251 and 252 of the Telecommunications Act of 1996), p.III-6-8.

[1645] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 55; ALTS reply at 26-29; Cable & Wireless comments 35; California Commission reply at 20; CFA/CU comments at 41-45; CompTel reply at 40-49; Cox reply at 29; DoJ reply at 11-13; Frontier comments at 23; Mass. Attorney General comments at 6-9; MCI comments at 70-71, reply at 16; MFS comments at 60 n.67; Ohio Consumers' Counsel comments at 25 n.7, reply at 15; Sprint comments at 59 n.33; Texas Public Utility Counsel comments at 36; Time Warner comments at 56-58; Telecommunications Resellers Ass'n comments at 41-42; WinStar comments at 41.

[1646] *See, e.g.*, Cable & Wireless comments 35; California Commission reply at 20; CompTel reply at 40; Mass. Attorney General comments at 6-8; Time Warner comments 56-58; Telecommunications Resellers Ass'n comments at 41-42.

to operate on the higher end of its cost curve through higher interconnection charges. They also argue that prices based on ECPR create incentives for incumbent LECs to shift costs of their competitive services to their bottleneck services, which distorts competition.[1647] Finally, opponents of ECPR assert that ECPR pricing shields the largest share of costs possible from competition, preserves the status quo, and imposes a barrier to entry.[1648]

662. Baumol, Ordover, and Willig, principal authors of the theory, explain that ECPR is not applicable for pricing of interconnection and unbundled network elements because the existing end user rates for local telecommunications are not appropriate as a baseline for ECPR. They claim that cross-subsidies are common in the current rates, and rates depart systematically from pertinent costs. Baumol, Ordover, and Willig conclude that applying ECPR to existing rates would result in component prices that lock in the incumbent LECs' monopoly profits and pricing inefficiencies, and would attract inefficient entry, where rates are too high, and would preclude efficient entry where rates are too low.[1649]

663. *Universal Service Subsidies.* Most parties other than incumbent LECs and some state commissions agree that it would be inconsistent with both the cost-based rate requirements of section 252(d)(1) and the requirement in section 254(b)(5), that universal service support mechanisms "be specific [and] predictable. . ."[1650] for states to include any universal service subsidies in the rates they set for interconnection, collocation, and unbundled network elements.[1651] They argue that the 1996 Act requires that rates reflect the economic cost of providing network elements and interconnection and does not authorize subsidies that have nothing to do with economic costs.[1652] With regard to the requirements of section 254,

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[1647] *See, e.g.*, N. Economides comments at 4-6.

[1648] *See, e.g.*, CFA/CU comments at 42.

[1649] *See* AT&T comments at Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), pp.8-9.

[1650] 47 U.S.C. § 254(b)(5).

[1651] *See, e.g.*, ACTA comments at 23; AT&T comments at 70-73; Competition Policy Institute comments at 20; CompTel comments at 73-74; DoJ comments at 56-59; MCI comments at 75; NEXTLINK comments at 29; Sprint comments at 61-62; Telecommunications Resellers Ass'n comments at 39 n.76; Teleport comments at 48-49; WinStar comments at 40-41, reply at 13-14.

[1652] AT&T and CompTel further contend that to permit any universal service subsidies in the rates set for interconnection, collocation and unbundled network elements would be to base rates on the embedded costs of incumbent LEC expenditures rather than the forward-looking economic costs of providing a network element as mandated by section 252(d)(1). *See* AT&T comments at 70-73; CompTel comments at 72-74.

these parties argue that, to the extent rates need to be subsidized for universal service purposes, the subsidy should be collected from all carriers on a non-discriminatory and competitively neutral basis.[1653] The Washington Commission relates its own experience of rejecting US West's request for a per minute universal service charge to cover "carrier of last resort" obligations and its finding that residential rates were sufficient to cover the costs of residential service.[1654]

664. In contrast, several incumbent LECs and state public utility commissions maintain that incumbent LECs should be permitted to recover their embedded costs in the rates set for interconnection, collocation, and unbundled network elements. These commenters claim that rates based on incremental costs alone fail to account for certain costs historically incurred to accomplish carrier-of-last-resort and universal service social policy objectives.[1655] The Attorneys General caution the Commission not to classify legitimate contributions to joint and common costs as impermissible implicit universal service subsidies.[1656]

665. Several parties comment on the issue of how universal service funding should be handled during the interim period between the effective date of this order and the effective date of the Commission's order implementing the section 254 universal service requirements in May 1997. AT&T proposes that the Commission adopt a competitively-neutral funding and distribution mechanism.[1657] CompTel proposes that the Commission grant a blanket waiver of incremental cost pricing for exchange access. Under CompTel's plan, pending completion of the section 254 proceeding, the incumbent LECs would continue to provide exchange access pursuant to their intrastate and interstate carrier-to-carrier access charge tariffs. At the conclusion of the section 254 proceeding, the Commission would determine whether the incumbent LECs are entitled to recover any portion of those revenues from competitive carriers and, if so, devise appropriate mechanisms for doing so. CompTel asserts

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[1653] *See, e.g.*, ACTA comments at 23; AT&T comments at 69; Massachusetts Commission comments at 8-10; MCI comments at 75; Michigan Commission comments at 19.

[1654] Washington Commission reply at 6.

[1655] *See, e.g.*, Alabama Commission comments at 24-25; Bay Springs, *et al.* comments at 16; BellSouth comments at 57; Matanuska Tel. comments at 2-3; TDS comments at 20; SBC comments at 89; Western Alliance comments at 6-7; *but see* BellSouth comments at 57 (if the universal service proceeding establishes a federal fund or if the states establish explicit funds, there will be no need for subsidies to be built into interconnection and unbundled network element rates).

[1656] Attorneys General reply at 10-11.

[1657] AT&T comments at 73.

that, by preserving the status quo for exchange access until those issues are fully considered and resolved, the Commission would ensure that the 1996 Act does not cause any unnecessary short-term disruption to carriers or consumers.[1658]

666. The Western Alliance contends that states should have authority to order the recovery of lost contribution through access charges until explicit and competitively neutral support mechanisms are in place.[1659] Similarly, the Massachusetts Commission argues that the states should have authority to include universal service subsidies in the rates for interconnection during this period. The Massachusetts Commission further contends that prohibiting states from exercising this authority will promote inefficient competition and ultimately could result in confiscation claims being filed by incumbent LECs.[1660]

667. Some parties take the position that "play or pay" proposals incorporate implicit subsidies into rates for interconnection and unbundled network elements and are therefore inconsistent with the 1996 Act.[1661] They further argue that such programs violate the 1996 Act because they do not require all telecommunications carriers to contribute on an equitable and nondiscriminatory basis and do not qualify as "specific, predictable and sufficient mechanisms" to preserve and advance universal service.[1662]

668. Other commenters argue, however, that the 1996 Act permits reasonable differences in interconnection rates charged to carriers so long as similarly-situated carriers are treated alike. They maintain that the anti-discrimination provisions of the 1996 Act only prohibit unreasonable discrimination. Thus, they contend that "play or pay" schemes are consistent with the 1996 Act.[1663] Several parties also contend that such schemes are authorized by the reservation of state power to adopt and implement universal service measures in section 254.[1664] Moreover, the New York Commission argues that the section

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[1658] CompTel comments at 84.

[1659] Western Alliance comments at 6-7.

[1660] Mass. Commission comments at 9-10.

[1661] *See, e.g.*, Frontier comments at 23; Teleport comments at 48-49; Texas Public Utility Counsel comments at 35-36; WinStar reply at 14 n.20.

[1662] WinStar comments at 40; *see also* Texas Public Utility Counsel comments at 35.

[1663] *See, e.g.*, New York Commission comments at 15-18; NYNEX comments at 91-97.

[1664] NYNEX comments at 95-97; New York Commission reply at 6.

254(e) requirement that universal service funding must be explicit applies only to the federal Universal Service Fund, which is yet to be established, and not to state initiatives.[1665]

669. Some commenters urge the Commission to address universal service in the section 254 proceeding rather than in the section 251/252 interconnection proceeding.[1666] Other commenters suggest that universal service, access restructure, and interconnection issues should be addressed in a coordinated manner or in a consolidated proceeding.[1667]

670. *Fifth Amendment Issues.* Several incumbent LECs claim that use of a LRIC-based pricing methodology that does not permit recovery of at least joint and common costs and a reasonable profit constitutes unlawful confiscation in violation of the Fifth and Fourteenth Amendments.[1668] Other LECs further argue that, in order to avoid an unconstitutional taking, any pricing rules we adopt must enable them to recover total costs, including historical or embedded costs.[1669] Generally, these parties contend that prices limited by a forward-looking economic cost methodology do not permit an incumbent LEC to remain profitable over time because LRIC fails to recover total costs.[1670] They assert that, if the Commission decides now, long after those costs have been sunk, to bar compensatory returns, it will violate due process and undermine the incumbent LECs' legitimate, investment-backed expectations.[1671] Such interference with legitimate investor expectations, they contend, constitutes an unlawful taking.[1672] GTE contends that Commission adoption of a pure TSLRIC methodology would represent an unconstitutional taking, because it would require

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[1665] New York Commission reply at 6.

[1666] *See, e.g.*, Competition Policy Institute comments at 13-14; F. Williamson comments at 8; Texas Public Utility Counsel comments at 36; ALTS reply at 35.

[1667] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 35; TDS comments at 20.

[1668] *See, e.g.*, GTE comments at 65-71; MECA comments at 42; Puerto Rico Telephone Company reply at 11-12; PacTel comments at 67.

[1669] *See, e.g.*, NYNEX comments at 43-44; PacTel comments at 65-66; SNET comments at 29; Roseville Tel. comments at 6-7.

[1670] *See, e.g.*, Ameritech comments at 62-70; GTE comments at 68-71, reply at 31-32; USTA comments at 39-42.

[1671] *See, e.g.*, GTE comments at 66-71, reply at 31-33; USTA comments at 40-45, reply at 21-25, 32-34.

[1672] *Id.*

use of the incumbent LEC's physical property, thus giving rise to an obligation to provide just compensation.[1673]

671. Other parties, including the Department of Justice and new entrants, contend that using a forward-looking cost-based pricing methodology for setting the rates for interconnection and unbundled elements does not constitute an unlawful taking.[1674] These commenters point out that many state commissions already utilize a forward-looking cost-based pricing methodology.[1675] They also argue that, because forward-looking cost-based rates capture all costs for interconnection and unbundled network elements, including the risk-adjusted cost of capital, such a methodology would not result in an unlawful taking.[1676] These parties further assert that the LECs' takings claims are premature, not demonstrated with sufficient specificity, and overstate the scope of the constitutional guarantee.[1677] Commenters note that no incumbent LEC has made any effort to demonstrate the actual impact of a LRIC-based pricing methodology on its "financial integrity."[1678] These parties contend that there is no unconstitutional impairment if the shortfall is not sufficient to jeopardize the operating and financial integrity of the utility. Finally, these commenters maintain that there is no constitutional right to a particular rate-setting methodology (*i.e.*, historical cost) and there are no general principles that require every component of an integral whole of a utility service to show a profit.[1679]

[1673] *See* GTE comments at 65-67.

[1674] *See, e.g.*, ALTS reply at 8-11; AT&T comments at 70-71; CompTel reply at 37-40; DoJ reply at 13, 16-19; MCI reply at 18-20.

[1675] *See, e.g.*, AT&T comments at 49-50; Cable & Wireless reply at 24-25; MCI reply at 19. AT&T also notes that when U S West and BellSouth have been new entrants into markets, they have advocated a LRIC approach. AT&T comments at 50-51 n.72.

[1676] *See, e.g.*, Frontier reply at 14; MCI reply at 18-19.

[1677] *See, e.g.*, DoJ reply at 16-18.

[1678] DoJ reply at 16-18; MCI reply at 18.

[1679] *See, e.g.*, Jones Intercable reply at 16-17.

(3) Discussion

672. *Overview.* Having concluded in Section II.D., above, that we have the requisite legal authority and that we should establish national pricing rules, we conclude here that prices for interconnection and unbundled elements pursuant to sections 251(c)(2), 251(c)(3), and 252(d)(1), should be set at forward-looking long-run economic cost. In practice, this will mean that prices are based on the TSLRIC of the network element, which we will call Total Element Long Run Incremental Cost (TELRIC), and will include a reasonable allocation of forward-looking joint and common costs. The 1996 Act encourages competition by removing barriers to entry and providing an opportunity for potential new entrants to purchase unbundled incumbent LEC network elements to compete efficiently to provide local exchange services. We believe that the prices that potential entrants pay for these elements should reflect forward-looking economic costs in order to encourage efficient levels of investment and entry.

673. In this section, we describe this forward-looking, cost-based pricing standard in detail. First, we define the terms we are using, explain how the methodology we are adopting differs from other costing approaches, and describe how it should be implemented. In particular, we explain that the price of a network element should include the forward-looking costs that can be attributed directly to the provision of services using that element, which includes a reasonable return on investment (*i.e.*, "profit"), plus a reasonable share of the forward-looking joint and common costs. Second, we address potential cost measures that must not be included in a TELRIC analysis, such as embedded (or historical) costs, opportunity costs, or universal service subsidies. Finally, we refute arguments that this methodology would violate the incumbent LECs' rights under the Fifth Amendment.

(a) Total Element Long Run Incremental Cost

674. *Definitions of Terms.* In light of the various possible definitions of a number of the critical economic terms used in this context, we begin by defining terms as we use them in this Order. Specifically, we provide definitions for the following terms: "incremental cost;" "economic cost;" "embedded or accounting cost;" "joint cost;" "common cost;" "long run incremental cost;" "total service long run incremental cost;" "total element long run incremental cost." In addition to defining these terms, we explain the economic rationale behind the concepts.

675. Incremental costs are the additional costs (usually expressed as a cost per unit) that a firm will incur as a result of expanding the output of a good or service by producing an additional quantity of the good or service.[1680] Incremental costs are forward-looking in the

[1680] *See* 1 Alfred Kahn *The Economics of Regulation* 66 (1971); William Baumol and Gregory Sidak, *Toward Competition in Local Telephony* 57 (1994).

sense that these costs are incurred as the output level changes by a given increment.[1681] The costs that are considered incremental will vary greatly depending on the size of the increment. For example, the incremental cost of carrying an additional call from a residence that is already connected to the network to its end office is virtually zero. The incremental cost of connecting a new residence to its end office, however, is the cost of the loop. Forward-looking incremental costs, plus a portion of the forward-looking joint and common costs, are sometimes referred to as "economic costs." Embedded or accounting costs are costs that firms incurred in the past for providing a good or service and are recorded as past operating expenses and depreciation. Due to changes in input prices and technologies, incremental costs may differ from embedded costs of that same increment. In competitive markets, the price of a good or service will tend towards its long-run incremental cost.

676. Certain types of costs arise from the production of multiple products or services. We use the term "joint costs" to refer to costs incurred when two or more outputs are produced in fixed proportion by the same production process (*i.e.*, when one product is produced, a second product is generated by the same production process at no additional cost). The term "common costs" refers to costs that are incurred in connection with the production of multiple products or services, and remains unchanged as the relative proportion of those products or services varies (*e.g.*, the salaries of corporate managers). Such costs may be common to all services provided by the firm or common to only a subset of those services or elements. If a cost is common with respect to a subset of services or elements, for example, a firm avoids that cost only by not providing each and every service or element in the subset. For the purpose of our discussion, we refer to joint and common costs as simply common costs unless the distinction is relevant in a particular context.

677. The term "long run," in the context of "long run incremental cost," refers to a period long enough so that all of a firm's costs become variable or avoidable.[1682] The term "total service," in the context of TSLRIC, indicates that the relevant increment is the entire quantity of the service that a firm produces, rather than just a marginal increment over and above a given level of production. Depending on what services are the subject of a study, TSLRIC may be for a single service or a class of similar services. TSLRIC includes the incremental costs of dedicated facilities and operations that are used by only the service in question. TSLRIC also includes the incremental costs of shared facilities and operations that are used by that service as well as other services.

678. While we are adopting a version of the methodology commonly referred to as

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[1681] William Baumol and Gregory Sidak, *Toward Competition in Local Telephony* 57 (1994).

[1682] *See, e.g.*, William Baumol, *Economic Theory and Operations Analysis* 290 (4th ed. 1977) ("The very long run is a period so long that all of the firm's present contracts will have run out, its present plant and equipment will have been worn out or rendered obsolete and will therefore need replacement, etc.").

TSLRIC as the basis for pricing interconnection and unbundled elements, we are coining the term "total element long run incremental cost" (TELRIC) to describe our version of this methodology. The incumbent LEC offerings to be priced using this methodology generally will be "network elements," rather than "telecommunications services," as defined by the 1996 Act.[1683] More fundamentally, we believe that TELRIC-based pricing of discrete network elements or facilities, such as local loops and switching, is likely to be much more economically rational than TSLRIC-based pricing of conventional services, such as interstate access service and local residential or business exchange service. As discussed in greater detail below, separate telecommunications services are typically provided over shared network facilities, the costs of which may be joint or common with respect to some services. The costs of local loops and their associated line cards in local switches, for example, are common with respect to interstate access service and local exchange service, because once these facilities are installed to provide one service they are able to provide the other at no additional cost. By contrast, the network elements, as we have defined them,[1684] largely correspond to distinct network facilities. Therefore, the amount of joint and common costs that must be allocated among separate offerings is likely to be much smaller using a TELRIC methodology rather than a TSLRIC approach that measures the costs of conventional services. Because it is difficult for regulators to determine an economically-optimal allocation of any such joint and common costs, we believe that pricing elements, defined as facilities with associated features and functions, is more reliable from the standpoint of economic efficiency than pricing services that use shared network facilities.

679. *Description of TELRIC-Based Pricing Methodology.* Adopting a pricing methodology based on forward-looking, economic costs best replicates, to the extent possible, the conditions of a competitive market. In addition, a forward-looking cost methodology reduces the ability of an incumbent LEC to engage in anti-competitive behavior. Congress recognized in the 1996 Act that access to the incumbent LECs' bottleneck facilities is critical to making meaningful competition possible. As a result of the availability to competitors of the incumbent LEC's unbundled elements at their economic cost, consumers will be able to reap the benefits of the incumbent LECs' economies of scale and scope, as well as the benefits of competition. Because a pricing methodology based on forward-looking costs simulates the conditions in a competitive marketplace, it allows the requesting carrier to produce efficiently and to compete effectively, which should drive retail prices to their competitive levels. We believe that our adoption of a forward-looking cost-based pricing methodology should facilitate competition on a reasonable and efficient basis by all firms in the industry by establishing prices for interconnection and unbundled elements based on costs similar to those incurred by the incumbents, which may be expected to reduce the regulatory

[1683] 47 U.S.C. §§ 3(29), 3(46).

[1684] *See supra* Section V.

burdens and economic impact of our decision for many parties, including both small entities seeking to enter the local exchange markets and small incumbent LECs.[1685]

680. We note that incumbent LECs have greater access to the cost information necessary to calculate the incremental cost of the unbundled elements of the network. Given this asymmetric access to cost data, we find that incumbent LECs must prove to the state commission the nature and magnitude of any forward-looking cost that it seeks to recover in the prices of interconnection and unbundled network elements.

681. Some parties express concern that the information required to compute prices based on forward-looking costs is inherently so hypothetical as to be of little or no practical value.[1686] Based on the record before us, we disagree. A number of states, which ultimately will have to review forward-looking cost studies in carrying out their duties under section 252, either have already implemented forward-looking, incremental costing methodologies to set prices for interconnection and unbundled network elements or support the use of such an approach.[1687] While these states have applied somewhat different definitions of, and approaches to setting prices developed on, an incremental cost methodology, the record demonstrates that such approaches are practical and implementable.

682. We conclude that, under a TELRIC methodology, incumbent LECs' prices for interconnection and unbundled network elements shall recover the forward-looking costs directly attributable to the specified element, as well as a reasonable allocation of forward-looking common costs. Per-unit costs shall be derived from total costs using reasonably accurate "fill factors" (estimates of the proportion of a facility that will be "filled" with network usage); that is, the per-unit costs associated with a particular element must be derived by dividing the total cost associated with the element by a reasonable projection of the actual total usage of the element. Directly attributable forward-looking costs include the incremental costs of facilities and operations that are dedicated to the element. Such costs typically include the investment costs and expenses related to primary plant used to provide that element. Directly attributable forward-looking costs also include the incremental costs of

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[1685] *See* Regulatory Flexibility Act, 5 U.S.C. §§ 601 *et seq.*

[1686] *See, e.g.*, GVNW comments at 35; NYNEX comments at 54; USTA comments at 47-50.

[1687] *See, e.g.*, Louisiana Commission comments at 4; Texas Commission comments at 22; Washington Commission comments at 25; California Commission comments at 28-29; Colorado Commission comments at 35; Maryland Commission comments at 7-8; Oklahoma Commission comments at Attachment A (Oklahoma Corporation Commission Telephone Rules, OAC 165:55) pp. 10-11. The Wyoming and Florida commissions have indicated their support for such an approach. *See* Wyoming Commission comments at 27 (supporting uniform use of TSLRIC costing methods so long as details left to states); *see also* Florida Commission comments at 26 (TSLRIC may be appropriate to set cost standard for a price floor).

shared facilities and operations. Those costs shall be attributed to specific elements to the greatest extent possible.[1688] For example, the costs of conduits shared by both transport and local loops, and the costs of central office facilities shared by both local switching and tandem switching, shall be attributed to specific elements in reasonable proportions. More broadly, certain shared costs that have conventionally been treated as common costs (or overheads) shall be attributed directly to the individual elements to the greatest extent possible. The forward-looking costs directly attributable to local loops, for example, shall include not only the cost of the installed copper wire and telephone poles but also the cost of payroll and other back office operations relating to the line technicians, in addition to other attributable costs.

683. Forward-looking cost methodologies, like TELRIC, are intended to consider the costs that a carrier would incur in the future. Thus, a question arises whether costs should be computed based on the least-cost, most efficient network configuration and technology currently available, or whether forward-looking cost should be computed based on incumbent LECs' existing network infrastructures, taking into account changes in depreciation and inflation. The record indicates three general approaches to this issue. Under the first approach, the forward-looking economic cost for interconnection and unbundled elements would be based on the most efficient network architecture, sizing, technology, and operating decisions that are operationally feasible and currently available to the industry. Prices based on the least-cost, most efficient network design and technology replicate conditions in a highly competitive marketplace by not basing prices on existing network design and investments unless they represent the least-cost systems available for purchase. This approach, however, may discourage facilities-based competition by new entrants because new entrants can use the incumbent LEC's existing network based on the cost of a hypothetical least-cost, most efficient network.

684. Under the second approach, the cost of interconnection and unbundled network elements would be based on existing network design and technology that are currently in operation.[1689] Because this approach is not based on a hypothetical network in the short run, incumbent LECs could recover costs based on their existing operations, and prices for interconnection and unbundled elements that reflect inefficient or obsolete network design and technology. This is essentially an embedded cost methodology.

685. Under the third approach, prices for interconnection and access to unbundled elements would be developed from a forward-looking economic cost methodology based on the most efficient technology deployed in the incumbent LEC's current wire center locations.

[1688] *Compare Telephone Company-Cable Television Cross-Ownership Rules*, CC Docket No. 87-266, Memorandum Opinion and Order on Reconsideration and Third Further Notice of Proposed Rulemaking, 10 FCC Rcd 244, 345-46 (1994).

[1689] *See, e.g.*, BellSouth reply at 37; Roseville Tel. reply at 8; USTA reply at 18-19.

This approach mitigates incumbent LECs' concerns that a forward-looking pricing methodology ignores existing network design, while basing prices on efficient, new technology that is compatible with the existing infrastructure. This benchmark of forward-looking cost and existing network design most closely represents the incremental costs that incumbents actually expect to incur in making network elements available to new entrants. Moreover, this approach encourages facilities-based competition to the extent that new entrants, by designing more efficient network configurations, are able to provide the service at a lower cost than the incumbent LEC. We, therefore, conclude that the forward-looking pricing methodology for interconnection and unbundled network elements should be based on costs that assume that wire centers will be placed at the incumbent LEC's current wire center locations, but that the reconstructed local network will employ the most efficient technology for reasonably foreseeable capacity requirements.

686. We agree with USTA, Bell Atlantic, and BellSouth that, as a theoretical matter, the combination of significant sunk investment, declining technology costs, and competitive entry may increase the depreciation costs and cost of capital of incumbent LECs. We do not agree, however, that TSLRIC does not or cannot account for risks that an incumbent LEC incurs because it has sunk investments in facilities. On the contrary, properly designed depreciation schedules should account for expected declines in the value of capital goods. Both AT&T and MCI appear to agree with this proposition.[1690] For example, AT&T states, "[i]n order to estimate TSLRIC, one must perform a discounted cash flow analysis of the future costs associated with the decision to invest . . . . One-time costs associated with the acquisition of capital goods are amortized over the economic life of the assets using the user cost of capital . . . , which requires accounting for both expected capital good price changes and economic depreciation."[1691] Moreover, we are confident that parties to an arbitration with TELRIC studies can propose specific depreciation rate adjustments that reflect expected asset values over time.

687. As noted, we also agree that, as a matter of theory, an increase in risk due to entry into the market for local exchange service can increase a LEC's cost of capital. We believe that this increased risk can be partially mitigated, however, by offering term discounts, since long-term contracts can minimize the risk of stranded investment. In addition, growth in overall market demand can increase the potential of the incumbent LEC to use some of its

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[1690] *See* Letter from Leonard S. Sawicki, Director, FCC Affairs, MCI Telecommunications Corp. to William F. Caton, Acting Secretary, FCC, July 24, 1996 at Attachment (Depreciation and Capital Recovery Issues: A Response to Professor Hausman), pp.1-3; *see also* Letter from Richard N. Clarke, AT&T, to William F. Caton, Acting Secretary, FCC, July 19, 1996 at Attachment (Capital Recovery Issues in TSLRIC Pricing: Response to Professor Jerry A. Hausman).

[1691] Letter from Richard N. Clarke, AT&T, to William F. Caton, Acting Secretary, FCC, July 19, 1996 at Attachment (Capital Recovery Issues in TSLRIC Pricing: Response to Professor Jerry A. Hausman), p.8.

displaced facilities for other purposes. Overall, we think that these factors can and should be captured in any LRIC model and therefore we do not agree that this requires a departure from the general principle of forward-looking cost-based pricing for network elements.

688. We are not persuaded by USTA's argument that forward looking methodologies fail to adjust the cost of capital to reflect the risks associated with irreversible investments and that they are "biased downward by a factor of three." First, USTA's argument unrealistically assumes that competitive entry would be instantaneous. The more reasonable assumption of entry occurring over time will reduce the costs associated with sunk investment. Second, we find it unlikely that investment in communications equipment is entirely irreversible or that such equipment would become valueless once facilities-based competition begins. In a growing market, there most likely would be demand for at least some embedded telecommunications equipment, which would therefore retain its value. Third, contractual arrangements between the new entrant and the incumbent that specifically address USTA's concerns and protect incumbent's investments during transition can be established.

689. Finally we are not persuaded that the use by firms of hurdle rates that exceed the market cost of capital is convincing evidence that sunk investments significantly increase a firm's cost of capital. An alternative explanation for this phenomenon is that the process that firms use to choose among investment projects results in overestimates of their returns. Firms therefore use hurdle rates in excess of the market cost of capital to account for these overestimates.[1692]

690. *Summary of TELRIC Methodology.* The following summarizes our conclusions regarding setting prices of interconnection and access to unbundled network elements based on the TELRIC methodology for such elements. The increment that forms the basis for a TELRIC study shall be the entire quantity of the network element provided. As we have previously stated, all costs associated with the providing the element shall be included in the incremental cost. Only forward-looking, incremental costs shall be included in a TELRIC study. Costs must be based on the incumbent LEC's existing wire center locations and most efficient technology available.

691. Any function necessary to produce a network element must have an associated cost. The study must explain with specificity why and how specific functions are necessary to provide network elements and how the associated costs were developed. Only those costs that are incurred in the provision of the network elements in the long run shall be directly

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[1692] *See* Richard Thaler, *The Winner's Curse*, 2 J. Econ. Perspectives 201 (1988); Keith Brown, *Note on the Apparent Bias of Net Revenue Estimates for Capital Investment Projects*, 29 J. Fin. 1215-16 (1974); Daniel Kahneman and Daniel Lovallo, *Timid Choices, Bold Forecasts*, 39 Management Science 17, 28 (1993). In addition, we note that Hausman's arguments that TSLRIC method underestimate the true cost of an element apply only to the capital expense associated with an element and not to the operating expense.

attributable to those elements. Costs must be attributed on a cost-causative basis. Costs are causally-related to the network element being provided if the costs are incurred as a direct result of providing the network elements, or can be avoided, in the long run, when the company ceases to provide them. Thus, for example, the forward-looking costs of capital (debt and equity) needed to support investments required to produce a given element shall be included in the forward-looking direct cost of that element. Directly attributable costs shall include costs such as certain administrative expenses, which have traditionally been viewed as common costs, if these costs vary with the provision of network elements. Retailing costs, such as marketing or consumer billing costs associated with retail services, are not attributable to the production of network elements that are offered to interconnecting carriers and must not be included in the forward-looking direct cost of an element.

692. In a TELRIC methodology, the "long run" used shall be a period long enough that all costs are treated as variable and avoidable.[1693] This "long run" approach ensures that rates recover not only the operating costs that vary in the short run, but also fixed investment costs that, while not variable in the short term, are necessary inputs directly attributable to providing the element.

693. States may review a TELRIC economic cost study in the context of a particular arbitration proceeding, or they may conduct such studies in a rulemaking and apply the results in various arbitrations involving incumbent LECs. In the latter case, states must replace any interim rates[1694] set in arbitration proceedings with the permanent rate resulting from the separate rulemaking. This permanent rate will take effect at or about the time of the conclusion of the separate rulemaking and will apply from that time forward.

694. *Forward-Looking Common Costs.* Certain common costs are incurred in the provision of network elements. As discussed above, some of these costs are common to only a subset of the elements or services provided by incumbent LECs. Such costs shall be allocated to that subset, and should then be allocated among the individual elements or services in that subset, to the greatest possible extent. For example, shared maintenance facilities and vehicles should be allocated only to the elements that benefit from those facilities and vehicles. Common costs also include costs incurred by the firm's operations as a whole, that are common to all services and elements (*e.g.*, salaries of executives involved in overseeing all activities of the business), although for the purpose of pricing interconnection and access to unbundled elements, which are intermediate products offered to competing carriers, the relevant common costs do not include billing, marketing, and other costs

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[1693] *See* 1 Alfred E. Kahn *The Economics of Regulation: Principles and Institutions* 70-71 (1988).

[1694] *See infra*, Section VII.C., discussing default proxy price ceilings and ranges.

attributable to the provision of retail service.[1695] Given these common costs, setting the price of each discrete network element based solely on the forward-looking incremental costs directly attributable to the production of individual elements will not recover the total forward-looking costs of operating the wholesale network.[1696] Because forward-looking common costs are consistent with our forward-looking, economic cost paradigm, a reasonable measure of such costs shall be included in the prices for interconnection and access to network elements.

695. The incumbent LECs generally argue that common costs are quite significant,[1697] while several other parties maintain that these amounts are minimal.[1698] Because the unbundled network elements correspond, to a great extent, to discrete network facilities, and have different operating characteristics, we expect that common costs should be smaller than the common costs associated with the long-run incremental cost of a service. We expect that many facility costs that may be common with respect to the individual services provided by the facilities can be directly attributed to the facilities when offered as unbundled network elements. Moreover, defining the network elements at a relatively high level of aggregation, as we have done,[1699] should also reduce the magnitude of the common costs. A properly conducted TELRIC methodology will attribute costs to specific elements to the greatest possible extent, which will reduce the common costs. Nevertheless, there will remain some common costs that must be allocated among network elements and interconnection services. For example, at the sub-element level of study (*e.g.*, identifying the respective costs of 2-wire loops, 4-wire loops, ISDN loops, and so on), common costs may be a significant proportion of all the costs that must be recovered from sub-elements. Given the likely asymmetry of information regarding network costs, we conclude that, in the arbitration process, incumbent LECs shall have the burden to prove the specific nature and magnitude of these forward-looking common costs.

696. We conclude that forward-looking common costs shall be allocated among elements and services in a reasonable manner, consistent with the pro-competitive goals of the

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[1695] *See infra*, Section VIII.B., describing "avoided costs" in the resale context.

[1696] *See, e.g.*, AT&T comments at 61-66; Teleport comments at 47-48.

[1697] *See, e.g.*, PacTel reply at 27-28; *see also* Cincinnati Bell reply at 10; USTA comments at Attachment 1 (Affidavit of Jerry A. Hausman), p.4 n.1.

[1698] *See, e.g.*, Competition Policy Institute comments at 19; MCI comments at 66; Texas Public Utility Counsel comments at 24.

[1699] *See supra*, Section V., discussing unbundling requirements.

1996 Act. One reasonable allocation method would be to allocate common costs using a fixed allocator, such as a percentage markup over the directly attributable forward-looking costs. We conclude that a second reasonable allocation method would allocate only a relatively small share of common costs to certain critical network elements, such as the local loop and collocation, that are most difficult for entrants to replicate promptly (*i.e.*, bottleneck facilities). Allocation of common costs on this basis ensures that the prices of network elements that are least likely to be subject to competition are not artificially inflated by a large allocation of common costs. On the other hand, certain other allocation methods would not be reasonable. For example, we conclude that an allocation methodology that relies exclusively on allocating common costs in inverse proportion to the sensitivity of demand for various network elements and services may not be used.[1700] We conclude that such an allocation could unreasonably limit the extent of entry into local exchange markets by allocating more costs to, and thus raising the prices of, the most critical bottleneck inputs, the demand for which tends to be relatively inelastic. Such an allocation of these costs would undermine the pro-competitive objectives of the 1996 Act.

697. We believe that our treatment of forward-looking common costs will minimize regulatory burdens and economic impact for all parties involved in arbitration of agreements for interconnection and access to unbundled elements, and will advance the 1996 Act's pro-competitive objectives for local exchange and exchange access markets.[1701] In our decisionmaking, we have considered the economic impact of our rules in this section on small incumbent LECs. For example, although opposed to the use of a forward-looking, economic cost methodology, small incumbent LECs favor the recovery of joint and common costs in the event the Commission adopts forward-looking cost methodology. We are adopting such an approach. Moreover, the cost-based pricing methodology that we are adopting is designed to permit incumbent LECs to recover their economic costs of providing interconnection and unbundled elements, which may minimize the economic impact of our decisions on incumbent LECs, including small incumbent LECs. We also note that certain small incumbent LECs are not subject to our rules under section 251(f)(1) of the 1996 Act, unless otherwise determined by a state commission, and certain other small incumbent LECs may seek relief from their state commissions from our rules under section 251(f)(2) of the 1996 Act.[1702]

[1700] *See* Frank P. Ramsey, *A Contribution to the Theory of Taxation*, 37 Econ. J. 47 (1927); *see generally* Kenneth E. Train, *Optimal Regulation: The Economic Theory of Natural Monopoly* 115-40 (1992) (discussing efficiency properties of Ramsey prices); Bridger M. Mitchell & Ingo Vogelsang, *Telecommunications Pricing: Theory and Practice* 43-61 (1991). The sensitivity of demand is measured by the elasticity of demand, which is defined as the percentage change in the quantity of a service demanded for a one per cent change in price.

[1701] *See* Regulatory Flexibility Act, 5 U.S.C. §§ 601 *et seq.*

[1702] 47 U.S.C. § 251(f).

698. We further conclude that, for the aggregate of all unbundled network elements, incumbent LECs must be given a reasonable opportunity to recover their forward-looking common costs attributable to operating the wholesale network. In no instance should prices exceed the stand-alone cost for a specific element, and in most cases they should be below stand-alone costs. Stand-alone costs are defined as the forward-looking cost that an efficient entrant would incur in providing a given element or any combination of elements. No price higher than stand-alone cost could be sustained in a market from which entry barriers were completely absent. Where there are few common costs, there is likely to be only a minimal difference between the forward-looking costs that are directly attributable to the particular element, which excludes these costs, and stand-alone cost, which includes all of them. Network elements should not, however, be priced at levels that would enable the incumbent LEC to recover the same common costs multiple times from different elements. Any multiple recovery would be unreasonable and thus in violation of the statutory standard. Further, we note that the sum of the direct costs and the forward-looking common costs of all elements will likely differ from the incumbent LEC's historical, fully distributed costs.

699. *Reasonable Return on Investment and "Profit."* Section 252(d)(1) states that rates for interconnection and access to unbundled elements "may include a reasonable profit."[1703] We find that the TELRIC pricing methodology we are adopting provides for such a reasonable profit and thus no additional profit is justified under the statutory language. We note there are two types of profit. First, in plain English, profit is defined as "the excess of returns over expenditure in a transaction or a series of transactions."[1704] This is also known as a "normal" profit, which is the total revenue required to cover all of the costs of a firm, including its opportunity costs.[1705] Second, there is "economic" profit, which is any return in excess of normal profit.[1706] Thus, for example, if the normal return in an industry is 10 percent and a firm earns a return of 14 percent, the economic profit for that firm is 4 percent. Economic is also referred to as "supranormal" profit. We conclude that the definition of "normal" profit is embodied in "reasonable profit" under Section 252(d)(1).

700. The concept of normal profit is embodied in forward-looking costs because the forward-looking cost of capital, *i.e.*, the cost of obtaining debt and equity financing, is one of the forward-looking costs of providing the network elements. This forward-looking cost of capital is equal to a normal profit. We conclude that allowing greater than normal profits

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[1703] 47 U.S.C. § 252(d)(1).

[1704] *Webster's New Collegiate Dictionary* 931 (10th ed. 1994).

[1705] *See* David W. Pearce, *The MIT Dictionary of Modern Economics* (1994) at 310.

[1706] *Id.* at 415.

would not be "reasonable" under sections 251(c) and 252(d)(1).[1707] Thus, contrary to the arguments put forth by several incumbent LECs, we find that adding an additional measure of profit to the risk-adjusted cost of capital[1708] in setting the prices for interconnection and access to unbundled elements would violate the requirements of sections 251(c) and 252(d)(1) of the 1996 Act.

701. Possible accounting losses from the sale of interconnection and unbundled network elements using a reasonable forward-looking cost-based methodology do not necessarily indicate that incumbent LECs are being denied a "reasonable profit" under the statute. The use of a forward-looking, economic, cost-based pricing methodology, including a reasonable allocation of legitimate joint and common costs, will permit incumbent LECs the opportunity to earn a reasonable return on their investment in network elements. Finally, contrary to PacTel's argument, and as discussed below in detail, we conclude that our forward-looking cost-based pricing methodology is consistent with the Fifth Amendment and is not confiscatory.

[1707] We note that our interpretation is consistent with existing Supreme Court precedent concerning what constitutes a reasonable rate of return for a regulated public utility. For example, in *Bluefield Water Works*, the Court stated:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures.

Bluefield Water Works & Improvement Co. v. Public Service Comm'n of West Virginia, 262 U.S. 679, 692-93 (1923). Similarly, in *FPC v. Hope Natural Gas*, the Court stated:

> . . . it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock . . . By that standard the return to the equity owner should be commensurate with risks on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591, 603 (1994) (*Hope Natural Gas*). *Cf.*, Charles F. Phillips, Jr., *The Economics of Regulation* 260 (Rev. ed. 1965) (". . . a regulated company must be afforded the opportunity not only of assuring its financial integrity so that it can maintain its credit standing and attract additional capital as needed, but also for earnings comparable to those of other companies having corresponding risks.").

[1708] *See supra*, this Section, for a discussion of risk-adjusted cost of capital.

702. Based on the current record, we conclude that the currently authorized rate of return at the federal or state level is a reasonable starting point for TELRIC calculations, and incumbent LECs bear the burden of demonstrating with specificity that the business risks that they face in providing unbundled network elements and interconnection services would justify a different risk-adjusted cost of capital or depreciation rate. These elements generally are bottleneck, monopoly services that do not now face significant competition. We recognize that incumbent LECs are likely to face increased risks given the overall increases in competition in this industry, which generally might warrant an increased cost of capital, but note that, earlier this year, we instituted a preliminary inquiry as to whether the currently authorized federal 11.25 percent rate of return is too high given the current marketplace cost of equity and debt.[1709] On the basis of the current record, we decline to engage in a time-consuming examination to determine a new rate of return, which may well require a detailed proceeding. States may adjust the cost of capital if a party demonstrates to a state commission that either a higher or lower level of cost of capital is warranted, without that commission conducting a "rate-of-return or other rate based proceeding."[1710] We note that the risk-adjusted cost of capital need not be uniform for all elements. We intend to re-examine the issue of the appropriate risk-adjusted cost of capital on an ongoing basis, particularly in light of the state commissions' experiences in addressing this issue in specific situations.

703. We disagree with the conclusion that, when there are mostly sunk costs, forward-looking economic costs should not be the basis for pricing interconnection elements. The TELRIC of an element has three components, the operating expenses, the depreciation cost,[1711] and the appropriate risk-adjusted cost of capital. We conclude that an appropriate calculation of TELRIC will include a depreciation rate that reflects the true changes in economic value of an asset and a cost of capital that appropriately reflects the risks incurred by an investor. Thus, even in the presence of sunk costs, TELRIC-based prices are an appropriate pricing methodology.

[1709] *See Common Carrier Bureau Sets Pleading Schedule in Preliminary Rate of Return Inquiry*, Public Notice, 11 FCC Rcd 3651 (Com. Car. Bur. 1996).

[1710] 47 U.S.C. § 252(d)(1)(A)(i).

[1711] Depreciation is the method of recognizing as an expense the cost of a capital investment. Properly calculated economic depreciation is a periodic reduction in the book value of an asset that makes the book value equal to its economic or market value.

(b) Cost Measures Not Included in Forward-Looking Cost Methodology

704. *Embedded Costs.* We read section 252(d)(1)(A)(i) to prohibit states from conducting traditional rate-of-return or other rate-based proceedings to determine rates for interconnection and access to unbundled network elements. We find that the parenthetical, "(determined without reference to a rate-of-return or other rate-based proceeding),"[1712] does not further define the type of costs that may be considered, but rather specifies a type of proceeding that may not be employed to determine the cost of interconnection and unbundled network elements. The legislative history demonstrates that Congress was eager to set in motion expeditiously the development of local competition and intended to avoid imposing the costs and administrative burdens associated with a traditional rate case. Prior to the joint conference, the Senate version of the 1996 Act contained the parenthetical language.[1713] In addition, the Senate version of the 1996 Act eliminated rate-of-return regulation,[1714] as did the House version.[1715] Conferees removed the provisions eliminating rate-of-return regulation, but retained the parenthetical.

705. Section 252(d)(1)(A)(i) does not specify whether historical or embedded costs should be considered or whether only forward-looking costs should be considered in setting arbitrated rates. We are not persuaded by incumbent LEC arguments that prices for interconnection and unbundled network elements must or should include any difference between the embedded costs they have incurred to provide those elements and their current economic costs. Neither a methodology that establishes the prices for interconnection and access to network elements directly on the costs reflected in the regulated books of account, nor a price based on forward looking costs plus an additional amount reflecting embedded costs, would be consistent with the approach we are adopting. The substantial weight of economic commentary in the record suggests that an "embedded cost"-based pricing methodology would be pro-competitor -- in this

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[1712] 47 U.S.C. § 252(d)(1)(A)(i).

[1713] S. 652, 104th Cong., 1st Sess. § 251(d)(6)(A) (1995) ("the charge (A) shall be (i) based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the unbundled element . . . .").

[1714] *Id.* at § 301(a)(3) ("Rate of Return Regulation Eliminated -- (A) In instituting the price flexibility required under paragraph (1) the Commission and the States shall establish alternative forms of regulation for Tier 1 telecommunications carriers that do not include regulation of the rate of return earned by such carrier . . . .").

[1715] H.R. 1555, 104th Cong., 1st Sess. § 248(b) (1995) ("Abolition of Rate-of-Return Regulation -- Notwithstanding any other provision of law, to the extent that a carrier has complied with sections 242 and 244 of this part, the Commission, with respect to rates for interstate or foreign communications, and State commissions, with respect to rates for intrastate communications, shall not require rate-of-return regulation.").

case the incumbent LEC -- rather than pro-competition.[1716] We therefore decline to adopt embedded costs as the appropriate basis of setting prices for interconnection and access to unbundled elements. Rather, we reiterate that the prices for the interconnection and network elements critical to the development of a competitive local exchange should be based on the pro-competition, forward-looking, economic costs of those elements, which may be higher or lower than historical embedded costs. Such pricing policies will best ensure the efficient investment decisions and competitive entry contemplated by the 1996 Act, which should minimize the regulatory burdens and economic impact of our decisions on small entities.[1717]

706. Incumbent LECs contend generally that, in order to ensure they will recover their total investment costs and earn a profit, they must recover embedded costs. These costs, they argue, were incurred under federal and regulatory oversight and therefore should be recoverable.[1718] We are not convinced by the incumbent LECs' principal arguments for recognizing embedded cost in setting section 251 pricing rules. Even if the incumbent LECs' contention is correct, increasing the rates for interconnection and unbundled elements offered to competitors would interfere with the development of efficient competition, and is not the proper remedy for any past under-depreciation. Moreover, contrary to assertions by some incumbent LECs, regulation does not and should not guarantee full recovery of their embedded costs. Such a guarantee would exceed the assurances that we or the states have provided in the past.[1719] We have considered the economic impact of precluding recovery of small incumbent LECs' embedded costs.[1720] We do not believe that basing the prices of interconnection and unbundled elements on an incumbent LEC's embedded costs would advance the pro-competitive goals of the statute. We also note that certain small incumbent LECs are not subject to our rules under section 251(f)(1) of the 1996 Act, unless otherwise determined by a state commission, and certain other small incumbent LECs may seek relief from their state commissions from our rules under

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[1716] *See, e.g.*, Ad Hoc Telecommunications Users' Committee reply at Appendix A (Interconnection Pricing Standards for Monopoly Rate Elements in a Potentially Competitive Local Telecommunications Market), p.4; ALTS comments at Attachment B (Competitive Pricing of Interconnection, Unbundled Elements, and Collocation), pp.28-29; AT&T reply at Appendix B (Reply Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), pp.3-5; Competition Policy Institute comments at 18-19; DJ comments at 30-31.

[1717] *See* Regulatory Flexibility Act, 5 U.S.C. §§ 601 *et seq.*

[1718] *See, e.g.*, Ameritech reply at 31; BellSouth comments at 57; Lincoln Tel. comments at 16-17.

[1719] *See In the Matter of the Applications of Pacific Bell*, Order and Authorization, 10 FCC Rcd 12448, 12502-12503 (1995).

[1720] *See* Regulatory Flexibility Act, 5 U.S.C. §§ 601 *et seq.*

section 251(f)(2) of the 1996 Act.[1721]

707. We acknowledge that some incumbent LECs may have incurred certain embedded costs reasonably before the passage of the 1996 Act based on different regulatory regimes. Some incumbent LECs may assert that they have made certain historical investments required by regulators that they have been denied a reasonable opportunity to recover in the past and that the incumbent LECs may no longer have a reasonable opportunity to recover in the new environment of the 1996 Act. The record before us, however, does not support the conclusion that significant residual embedded costs will necessarily result from the availability of network elements at economic costs. To the extent that any such residual consists of costs of meeting universal service obligations, the recovery of such costs can and should be considered in our ongoing universal service proceeding.[1722] To the extent a significant residual exists within the interstate jurisdiction that does not fall within the ambit of section 254, we intend that to address that issue in our upcoming proceeding on access reform.

708. *Opportunity Cost – Efficient Component Pricing Rule.* A number of incumbent LECs advocate using the "efficient component pricing rule" (ECPR) to set the prices that incumbent LECs charge new entrants for inputs required to produce the same retail services the incumbent produces. Under the ECPR, the price of an input should be equal to the incremental cost of the input plus the opportunity cost that the incumbent carrier incurs when the new entrant provides the services instead of the incumbent. The opportunity cost, which is computed as revenues less all incremental costs, represents both profit and contribution to common costs of the incumbent, given the existing retail prices of the services being sold.

709. We conclude that ECPR is an improper method for setting prices of interconnection and unbundled network elements because the existing retail prices that would be used to compute incremental opportunity costs under ECPR are not cost-based. Moreover, the ECPR does not provide any mechanism for moving prices towards competitive levels; it simply takes prices as given. The record indicates that both incumbents and new entrants agree that retail prices are not based on costs. Incumbents generally argue that local residential retail prices are below costs while new entrants contend that they exceed competitive levels.[1723] In either case, application of ECPR would result in input prices that would be either higher or lower than those which would be generated in a competitive market and would not lead to efficient retail pricing.

710. In markets where retail prices exceed competitive levels, entry would take place if

[1721] 47 U.S.C. § 251(f).

[1722] *See Universal Service* NPRM at para. 32.

[1723] *See, e.g.*, Ameritech comments at 62.

network element prices were set at efficient competitive levels. The ECPR, however, will serve to discourage competition in these very markets because it relies on the prevailing retail price in setting the price which new entrants pay the incumbent for inputs. While ECPR establishes conditions for efficient entry given existing retail prices, as its advocates contend, the ECPR provides no mechanism that will force retail prices to their competitive levels. We do not believe that Congress envisioned a pricing methodology for interconnection and network elements that would insulate incumbent LECs' retail prices from competition. Instead, Congress specifically determined that input prices should be based on costs because this would foster competition in the retail market. Therefore, we reject the use of ECPR for establishing prices for interconnection and unbundled elements.

711. As discussed above, the record in this docket shows that end user prices are not cost-based. In *Open Video Systems*, in contrast, we did not find that there would be a problem with the determination of end user prices.[1724] We concluded that "[u]se of [an ECPR] approach is appropriate in circumstances where the pricing is applicable [sic] to a new market entrant (the open video system operator) that will face competition from an existing incumbent provider (the incumbent cable operator), as opposed to circumstances where the pricing is used to establish a rate for an essential input service that is charged to a competing new entrant by an incumbent provider."[1725] In addition, in *Open Video Systems*, we concluded that the ECPR is appropriate because it encourages entry for open video system operators and also enhances the availability of carriage for unaffiliated programmers.[1726] The ECPR generally protects the provider's profits and provides opportunities for third parties to use the provider's inputs. The ECPR does not provide a mechanism to drive retail prices to competitive levels, however. In *Open Video Systems*, we wanted to encourage entry by open video system providers and to encourage them to have incentives to open their systems to unaffiliated programmers. Here, our goal is to ensure that competition between providers, including third party providers using interconnection and unbundled elements, will drive prices toward competitive levels and thus use of the ECPR is inappropriate.

712. *Universal Service Subsidies.* We conclude that funding for any universal service mechanisms adopted in the universal service proceeding may not be included in the rates for interconnection, network elements, and access to network elements that are arbitrated by the states under sections 251 and 252. Sections 254(d) and 254(e) of the 1996 Act mandate that universal service support be recovered in an equitable and nondiscriminatory manner from all providers of

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[1724] *Implementation of Section 302 of the Telecommunications Act of 1996 – Open Video Systems*, CS Docket No. 96-46, Second Report and Order, FCC 96-249 (rel. June 3, 1996) (*Open Video Systems*).

[1725] *Id.* at 127.

[1726] *Id.*

telecommunications services.[1727] We conclude that permitting states to include such costs in rates arbitrated under sections 251 and 252 would violate that requirement by requiring carriers to pay specified portions of such costs solely because they are purchasing services and elements under section 251. Section 252(d)(1) requires that rates for interconnection, network elements, and access to network elements reflect the costs of providing those network elements, not the costs of supporting universal service.

713. Section 254(f) provides that a state may adopt equitable, nondiscriminatory, specific, and predictable mechanisms to advance universal service within that state.[1728] If a state collects universal service funding in rates for elements and services pursuant to sections 251 and 252, it will be imposing non-cost based charges in those rates. Including non-cost based charges in the rates for interconnection and unbundled elements is inconsistent with our rules implementing sections 251 and 252 which require that these rates be cost-based. It is also inconsistent with the requirement of section 254(f) that telecommunications carriers contribute to state universal service on a nondiscriminatory basis, because telecommunications carriers requesting interconnection or access to unbundled network elements will be required to make contributions to universal service support through such surcharges.[1729] States may not, therefore, include universal service support funding in the rates for elements and services pursuant to sections 251 and 252, nor may they implement mechanisms that have the same effect. For example, states may not fund universal service support by imposing higher rates for interconnection, unbundled elements, or transport and termination on carriers that offer service to different types of customers or different geographic areas. To the extent that New York's "pay or play" system funds universal service in this manner, it violates sections 251, 252, and 254 of the 1996 Act. Nothing in the 1996 Act or in this Order, however, precludes a state from adopting a universal service funding mechanism, whether interim or otherwise, if such funds are collected in accordance with section 254(f) on an "equitable and nondiscriminatory basis" through "specific, predictable, and sufficient mechanisms that do not rely on or burden Federal universal service support mechanisms."[1730]

714. Our decision here does not exempt carriers purchasing elements or services under section 251 from contributing to (or possibly receiving) universal service support. Rather, the recovery of universal service support costs from telecommunications carriers, including carriers requesting unbundled network elements, will be governed by section 254 of the 1996 Act.

[1727] Joint Explanatory Statement at 131 ("In keeping with the conferees' intent that universal service support should be clearly identified, [section 254(e)] states that such support should be made explicit . . .").

[1728] 47 U.S.C. § 254(f).

[1729] *See infra*, Section VII.D.3., discussing discrimination.

[1730] 47 U.S.C. § 254(f).

Federal universal service support mechanisms will be determined by our decisions reached in CC Docket 96-45, based on the recommendations of the Federal/State Universal Service Joint Board, and states may adopt additional universal service support mechanisms consistent with section 254(f).

715. We are mindful that the requirements of the 1996 Act may be disruptive to existing state universal service support mechanisms during the period commencing with this order and continuing until we complete our universal service proceeding to implement section 254. As discussed in the subsection immediately below, we permit incumbent LECs to continue to recover certain non-cost-based interstate access charge revenues for a limited period of time, largely because of concerns about possible deleterious impacts on universal service. We also authorize incumbent LECs, for a similar limited period of time, to continue to recover explicit intrastate universal service subsidy revenues based on intrastate access charges. This mechanism minimizes any possibility that implementation of sections 251 and 252 will unduly harm universal service during the interim period prior to completion of our universal service and access reform proceedings. Because we conclude this action should adequately provide for the continuation of a portion of existing subsidy flows during a transition period until completion of our proceeding implementing section 254, we decline to permit any additional funding of universal service support through rates for interconnection, unbundled elements, and transport and termination during the interim period.

716. *Interim Application of Access Charges to Purchasers of Unbundled Local Switching Element.* In the introduction of this Order, we emphasize that implementation of section 251 of the 1996 Act is integrally related to both universal service reform as required under section 254, and to reform of the interstate access charge system.[1731] In order to achieve pro-competitive, deregulatory markets for all telecommunications services, we must create a new system of funding universal service that is specific, explicit, predictable, sufficient, and competitively neutral. We also must move access charges to more cost-based and economically efficient levels. We intend to fulfill both of these goals in the coming months, by completing our pending universal service proceeding to implement section 254 by our statutory deadline of May 1997, and by addressing access charge issues in an upcoming access reform proceeding. The 1996 Act, however, requires us to adopt rules implementing section 251 by August 1996. We are concerned that implementation of the requirements of section 251 now, without taking into account the effects of the new rules on our existing access charge and universal service regimes, may have significant, immediate, adverse effects that were neither intended nor foreseen by Congress.

717. Specifically, as we conclude above, the 1996 Act permits telecommunications carriers that purchase access to unbundled network elements from incumbent LECs to use those elements to provide telecommunications services, including the origination and termination of interstate calls. Without further action on our part, section 251 would allow entrants to use those

[1731] *See supra*, Section I.B.

unbundled network facilities to provide access services to customers they win from incumbent LECs, without having to pay access charges to the incumbent LECs. This result would be consistent with the long term outcome in a competitive market. In the short term, however, while other aspects of our regulatory regime are in the process of being reformed, such a change may have detrimental consequences.

718. The access charge system includes non-cost-based components and elements that at least in part may represent subsidies, such as the carrier common line charge (CCLC) and the transport interconnection charge (TIC). The CCLC recovers part of the allocated interstate costs for incumbent LECs to provide local loops to end users. In the universal service NPRM, we observed that the CCLC may result in higher-volume toll users paying rates that exceed cost, and some customers paying rates that are below cost. We sought comment on whether that subsidy should be continued, and on whether and how it should be restructured.[1732] The nature of most of the revenues recovered through the TIC is unclear and subject to dispute, although a portion of the TIC is associated with certain costs related to particular transport facilities. Although the TIC was not created to subsidize local rates, some parties have argued in the *Transport* proceeding and elsewhere that some portion of the revenues now recovered through the TIC may be misallocated local loop or intrastate costs that operate to support universal service.[1733] In the forthcoming access reform proceeding, we intend to consider the appropriate disposition of the TIC, including the development of cost-based transport rates as directed by the United States Court of Appeals for the District of Columbia Circuit in *Competitive Telecommunications Association v. FCC* (*CompTel v. FCC*).[1734]

719. Without a temporary mechanism such as the one we adopt below, the implementation of section 251 would permit competitive local service providers that also provide interstate long-distance service to avoid totally the CCLC and the TIC, which in part represent contributions toward universal service, by serving their local customers solely through the use of unbundled network elements rather than through resale. We believe that allowing such a result before we have reformed our universal service and access charge regimes would be undesirable as a matter of both economics and policy, because carrier decisions about how to interconnect with incumbent LECs would be driven by regulatory distortions in our access charge rules and our universal service scheme, rather than the unfettered operation of a competitive market. Because

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[1732] *Universal Service* NPRM at paras. 113-14.

[1733] *Transport Rate Structure and Pricing*, CC Docket No. 91-213, Report and Order and Further Notice of Proposed Rulemaking, 7 FCC Rcd 7006, 7065-7066 (1992) (*First Transport Order*). *Cf.* Letter from Bruce K. Cox, Government Affairs Director, AT&T, to William F. Caton, Acting Secretary, FCC, September 7, 1995 (filed in CC Docket No. 91-213) (suggesting that TIC revenues not allocable to specific transport facilities may represent misallocated common line costs).

[1734] *Competitive Telecommunications Association v. FCC*, No. 96-1168 (D.C. Cir. July 5, 1996).

of our desire to err on the side of caution where universal service may be implicated, we conclude that some action is needed during the interim period before we complete our access reform and universal service proceedings.

720. We conclude that we should establish a temporary transitional mechanism to help complete all of the steps toward the pro-competitive goal of the 1996 Act, including the implementation of a new, competitively-neutral system to fund universal service and a comprehensive review of our system of interstate access charges. Therefore, for a limited period of time, incumbent LECs may recover from interconnecting carriers the CCLC and a charge equal to 75 percent of the TIC for all interstate minutes traversing the incumbent LECs' local switches for which the interconnecting carriers pay unbundled local switching element charges. Incumbent LECs may recover these charges only until the earliest of: (1) June 30, 1997; (2) the effective date of final decisions by the Commission in both the universal service and access reform proceedings; or (3) if the incumbent LEC is a BOC, the date on which that BOC is authorized under section 271 of the 1996 Act to offer in-region interLATA service. The end date for BOCs that are authorized to offer interLATA service shall apply only to the recovery of access charges in those states in which the BOC is authorized to offer such service.

721. We tentatively concluded in the NPRM that purchasers of unbundled network elements should not be required to pay access charges. We reaffirm our conclusion above in our discussion of unbundled network elements that nothing on the face of sections 251(c)(3) and 252(d)(1) compels telecommunications carriers that use unbundled elements to pay these charges, nor limits these carriers' ability to use unbundled elements to originate or terminate interstate calls, and that payment of rates based on TELRIC plus a reasonable allocation of common costs, pursuant to section 251(d)(1), represents full compensation to the incumbent LEC for use of the network elements that telecommunications carriers purchase. Because of the unique situation described in the preceding paragraphs, however, we conclude, contrary to our proposal in the NPRM, that during a time-limited period, interconnecting carriers should not be able to use unbundled elements to avoid access charges in all cases. As detailed below, this temporary mechanism will apply only to carriers that purchase the local switch as an unbundled network element, and use that element to originate or terminate interstate traffic.[1735] We are applying these transitional charges to the unbundled local switching element, rather than to any other network elements, because such an approach is most closely analogous to the manner in which the CCLC and TIC are recovered in the interstate access regime. Currently, the CCLC and TIC apply to interstate switched access minutes that traverse incumbent LECs' local switches. Applying the CCLC and 75 percent of the TIC to the unbundled local switching element is consistent with our goal of minimizing disruptions while we reform our universal service system and consider changes to our access charge mechanisms. Moreover, the CCLC and the TIC are

[1735] As discussed *infra*, carriers that choose to enter a local market through resale of an incumbent LEC's intrastate local exchange service will pay interstate and intrastate access charges to originate and terminate toll traffic for end user customers that purchase that resold local exchange service.

recovered on a per-minute basis, and the local switch is the primary point at which incumbent LECs are capable of recording interstate minutes for traffic associated with end user customers of requesting carriers.

722. We have crafted this short-term continuation of certain access charge revenue flows to minimize the possibility that incumbent LECs will be able to "double recover" through access charges the facility costs that new entrants have already paid to purchase unbundled elements. For that reason, we do not permit incumbent LECs to assess on purchasers of the unbundled local switching element any interstate access charges other than the CCLC and 75 percent of the TIC. The other access charges are all designed to recover the cost of particular facilities involved in the provision of interstate access services, such as local switching, dedicated interoffice transport circuits, and tandem switching. Imposition of these facility-based access charges in addition to the cost-based charges for comparable network elements established under Section 252 could result in double recovery. The mechanism we establish will ensure that incentives created by non-cost-based elements of access charges do not result in harmful consequences prior to completion of access reform and our universal service proceeding. Imposition of additional access charges is therefore not necessary. We note that this mechanism serves to minimize the potentially disruptive effects of our decisions on incumbent LECs, including small incumbent LECs.[1736]

723. For the same reason, we permit incumbent LECs to recover only 75 percent of the TIC. Some portion of the TIC recovers revenues associated with specific transport facilities. To the extent that these costs can be identified clearly, they should not be imposed on new entrants through the TIC. Incumbent LECs will be fully compensated for any transport facilities that new entrants purchase from them through the unbundled element rates states establish under 252(d)(1), which, as we have stated, must be based on economic cost rather than access charges. In our interim transport rate restructuring, we explicitly set the initial tandem switching rate at 20 percent of the interstate revenue requirement, with the remainder included in the TIC.[1737] In addition, certain costs of upgrading incumbent LEC networks to support SS7 signaling were allocated to transport through then-existing separations procedures. In our interim transport rate restructuring, we did not create any facility-based charges to recover these costs,[1738] so the associated revenues presumably were incorporated into the TIC. There may also be other revenues associated with transport facilities that are recovered today through the TIC. While we are uncertain of the precise magnitude of these revenues, in our best judgment, based on the record in the *Transport* proceeding and other information before us, we find that it is likely that

[1736] *See* Regulatory Flexibility Act, 5 U.S.C. §§ 601 *et seq.*

[1737] *First Transport Order*, 7 FCC Rcd at 7019.

[1738] *First Transport Order*, 7 FCC Rcd at 7019.

these revenues approach, but probably do not exceed 25 percent of the TIC for most incumbent LECs. Thus, we believe that 25 percent is a conservative amount to exclude from the TIC to ensure that incumbent LECs do not double recover revenues associated with transport facilities from new entrants. Moreover, the Court in *CompTel v. FCC* remanded our *Transport* decision, in part, because of the inclusion of tandem switching revenues in the TIC rather than in the rate element for tandem switching. We find that excluding 25 percent of the TIC represents a reasonable exercise of our discretion to prevent revenues associated with the tandem switching revenue requirement from being recovered from purchasers or unbundled local switching.

724. We strongly emphasize that these charges will apply to purchasers of the unbundled switching element only for a very limited period, to avoid the possible harms that might arise if we were to ignore the effects on access charges and universal service of implementation of section 251. BOCs shall not be permitted to recover these revenues once they are authorized to offer in-region interLATA service, because at that time the potential loss of access charge revenues faced by a BOC most likely will be able to be offset by new revenues from interLATA services. Moreover, although we do not prejudge the conditions necessary to grant BOC petitions under section 271 to offer in-region interLATA service, we do decide that BOCs should not be able to charge the CCLC and the TIC, which are not based on forward-looking economic costs, to competitors that use unbundled elements under section 251 once they are authorized to provide in-region interLATA service. Only BOCs are subject to special restrictions in the 1996 Act to ensure that their entry into the in-region interLATA market does not have an adverse impact on competition. We conclude that this additional trigger date after which BOCs may not continue to receive access charges from purchasers of unbundled local switching is consistent with this Congressional design.

725. We have selected June 30, 1997 as an ultimate end date for this transitional mechanism to coincide with the effective date for LEC annual access tariffs, and because we believe it is imperative that this transitional requirement be limited in duration. We can conceive of no circumstances under which the requirement that certain entrants pay the CCLC or a portion of the TIC on calls carried over unbundled network elements would be extended further. The fact that access or universal service reform have not been completed by that date would not be a sufficient justification, nor would any actual or asserted harm to the financial status of the incumbent LECs. By June 30, 1997, the industry will have had sufficient time to plan for and adjust to potential revenue shifts that may result from competitive entry. Thus, the economic impact of our decision on competitive local service providers, including those that are small entities, should be minimized.[1739]

726. We believe that we have ample legal authority to implement this temporary transitional measure, and we find that this approach is consistent with the letter and spirit of the 1996 Act. We recognize that the CCLC and TIC have not been developed in accordance with the

[1739] *See* Regulatory Flexibility Act, 5 U.S.C. §§ 601 *et seq.*

pricing standards of section 252(d)(1), and that to comply with the 1996 Act, the rates that states establish for interconnection and unbundled network elements may not include non-cost-based amounts or subsidies. The 1934 and 1996 Acts do, however, give us legal authority to determine, for policy reasons, that users of LEC facilities should pay certain access charges for a period of time.[1740] Section 4(i) of the 1934 Act authorizes the Commission to "perform any and all acts . . . not inconsistent with this Act, as may be necessary in the execution of its functions."[1741] Given the extraordinary upheaval in the industry's structure set in motion by the 1996 Act, and the specific concerns described above, we believe that a temporary mechanism is necessary in order to ensure that the policy goals underlying the access charge system and the Communications Act itself are not undermined. Further, we believe section 251(g) of the 1996 Act lends support to our decision. As discussed above, section 251(g) does not require that incumbent LECs continue to receive access charge revenues when telecommunications carriers use unbundled incumbent LEC network elements to originate and terminate interstate traffic. That section does, however, provide evidence of Congressional recognition of the potential tension between existing interconnection obligations, such as access charges, and the new methods of interconnection mandated by section 251, and therefore supports our decision to create a limited-duration mechanism to address this tension.

727. The decision of the court in *CompTel v. FCC* to remand our decision to adopt the TIC is not inconsistent with this approach. The Court's concern stemmed, in part, from the inclusion of a portion of the interstate tandem switching revenue requirement in the TIC. We have excluded from the charges that purchasers of unbundled local switching must pay a percentage of the TIC that, at a minimum, includes these allocated tandem switching revenues from the transitional charges that incumbent LECs may assess on IXCs.[1742] Furthermore, the Court directed the Commission to develop a cost-based transport rate structure, or to explain why it chose not to do so.[1743] We intend to fulfill this obligation in the forthcoming access reform proceeding. The charge equal to 75 percent of the TIC will be applied only as an interim measure for a brief, clearly-identified period, until that restructuring of access charges is completed. The court expressly acknowledged that the 1996 Act would have implications for the

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[1740] *See, e.g., New England Tel. and Tel. Co. v. FCC*, 826 F.2d 1101 (D.C. Cir 1987); *North American Telecommunications Association v. FCC*, 772 F.2d (7th Cir. 1085); *Lincoln Tel. and Tel. Co. v. FCC*, 659 F.2d (D.C. Cir. 1989).

[1741] 47 U.S.C. § 4(i).

[1742] As discussed above, we estimate that the tandem switching, SS7, and other costs associated with transport facilities now recovered through the TIC likely do not exceed 25% of the TIC for most incumbent LECs.

[1743] *Competitive Telecommunications Association v. FCC*, No. 96-1168 at 26-27.

access charge system.[1744] For the reasons described above, we conclude that these effects necessitate temporary application of a portion of the TIC to entrants that win end user customers from LECs, and that purchase the local switch as an unbundled element to originate and terminate interstate and intrastate toll traffic for such end users. In the access reform proceeding, we intend to determine the appropriate disposition for these revenues. Until we have had the opportunity to do so, however, we permit incumbent LECs to recover a transitional charge equal to 75 percent of the TIC under the limited circumstances described herein.

728. The interim mechanism we establish here differs from the waiver relief we have previously granted to NYNEX and Ameritech to permit them to recover certain interstate access charge revenues through "bulk billing" of revenues to all interstate switched access customers.[1745] Those orders responded to waiver requests filed prior to the passage of the 1996 Act. Our responsibility in those proceedings was to determine whether special circumstances existed, and whether the specific relief requested better served the public interest than continued application of our general rules. By constrast, the action we take today addresses industry-wide issues that arise from the new regime put into place by section 251 of the 1996 Act, which allows states to establish unbundled network element rates that recover the full unseparated cost of elements. Our response to the Ameritech and NYNEX waiver petitions does not, simply because those petitions also concerned access charge recovery, constrain our decision in this proceeding.

729. It would be unreasonable to provide such a transitional mechanism on the federal level, but to deny similar authority to the states. Therefore, states may continue existing explicit universal service support mechanisms based on intrastate access charges for an interim period of a similar brief, clearly-defined length. During that period, unless decided otherwise by the state, incumbent LECs may continue to recover such revenues from purchasers of unbundled local switching elements that use those elements to originate or terminate intrastate toll calls for end user customers they win from incumbent LECs. States may terminate these mechanisms at any time. We define mechanisms based on intrastate access charges as those mechanisms that require purchasers of intrastate access services from incumbent LECs to pay non-cost-based charges for those access services on the basis of their intrastate access minutes of use.

730. We do not intend, however, that such a transitional mechanism eviscerate the requirements of sections 252 and 254, which, as we have stated, prohibit funding of universal service subsidies through rates for interconnection and unbundled network elements. Mechanisms

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[1744] *Id.* at 12-13.

[1745] *See The NYNEX Tel. Cos. Petition for Waiver, Transition Plan to Preserve Universal Service in a Competitive Environment*, Memorandum Opinion and Order, 10 FCC Rcd 7445 (1995), *reconsideration pending* (*NYNEX USPP Order*); *Ameritech Operating Companies Petition for a Declaratory Ruling and Related Waivers to Establish a New Regulatory Model for the Ameritech Region*, Order, FCC 96-58 (released Feb. 15, 1996) (*Ameritech Customers First Order*).

such as New York's "pay or play" system, which would impose intrastate access charges on non-access services rather than allowing incumbent LECs to recover non-cost-based revenues from purchasers of access services, may not be included in this interim system. Such a result is justified because state "pay or play" mechanisms do not at present constitute a significant revenue stream to incumbent LECs, and therefore elimination of this mechanism is unlikely, in the short term, to have significant detrimental effects on universal service support.

731. These state mechanisms must end on the earlier of: (1) June 30, 1997; or (2) if the incumbent LEC that receives the transitional access charge revenues is a BOC, the date on which that BOC is authorized under section 271 of the 1996 Act to offer in-region interLATA service. With one exception, the analysis provided above as to the rationale for the end dates for the transitional interstate access charge mechanism applies here as well. Because our access reform proceeding focuses on federal charges, and because the full extent of the section 254 universal service mechanism remains to be determined in that proceeding, intrastate access charge-based universal service support mechanisms should not now be required to terminate upon the completion of those proceedings.

732. As with our decision to permit incumbent LECs to continue to receive certain interstate access charge revenues from some purchasers of unbundled local switching for a limited period of time, we believe our decision to allow states to preserve certain intrastate universal service support mechanisms based on access charges is within our authority under section 251(d)(1) of the 1996 Act, and section 4(i) of the 1934 Act. Moreover, although section 251(g) does not directly refer to intrastate access charge mechanisms, it would be incongruous to conclude that Congress was concerned about the effects of potential disruption to the interstate access charge system, but had no such concerns about the effects on analogous intrastate mechanisms.

(c) Fifth Amendment Issues

733. We conclude that our decision that prices for incumbent LECs' unbundled elements and interconnection offerings be based on forward-looking economic cost does not violate the incumbent LECs' rights under the Fifth Amendment of the Constitution. The Supreme Court has recognized that public utilities owned and operated by private investors, even though their assets are employed in the public interest to provide consumers with service, may assert their rights under the Takings Clause of the Fifth Amendment.[1746] In applying the Takings Clause to rate setting for public utilities, the Court has stated that "[t]he guiding principle has been that the Constitution protects utilities from being limited to a charge for their property serving the public

[1746] The Fifth Amendment provides that, "private property [shall not] be taken for public use, without just compensation." U.S. Const. amend. V. *See Duquesne Light Co. v. Barasch*, 488 U.S. 299, 307 (1989) (*Duquesne*).

which is so 'unjust' as to be confiscatory."[1747]

734. The Supreme Court has held that the determination of whether a rate is confiscatory depends on whether that rate is just and reasonable, and not on what methodology is used.[1748] In *Federal Power Comm'n v. Hope Natural Gas Co.*, the Court upheld the Federal Power Commission's order that required the company to make a large reduction in wholesale gas rates. The commission based its determination of a reasonable rate of return on a plant valuation determined by using a historical cost methodology that was only half as large as the company's own valuation based on forward-looking reproduction costs. In its decision, the Court set forth the governing legal standard for determining whether a rate is constitutional:

> Under the statutory standard of "just and reasonable" it is the result reached not the method employed that is controlling. It is not the theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end. The fact that the method employed to reach that result may contain infirmities is not then important.[1749]

735. The Court went on to explain that, in determining whether a rate is reasonable, the regulatory body must balance the interests of both the investor and consumer.[1750] "From the investor or company point of view, it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business . . . . [T]he return on the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks."[1751]

736. Under sections 251(c)(2) and (3) of the 1996 Act, incumbent LECs must establish

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[1747] *Duquesne*, 488 U.S. at 307 (*citing Covington & Lexington Turnpike Road Co. v. Sandford*, 164 U.S. 578, 597 (1896)).

[1748] *Hope Natural Gas*, 320 U.S. at 602-603; *see also Duquesne; In re Permian Basin Area Rate Cases*, 390 U.S. 747 (1968); *Federal Power Commission v. Memphis Light, Gas & Water Division*, 411 U.S. 458 (1973); *Jersey Central Power & Light v. FERC*, 810 F.2d 1168 (D.C. Cir. 1987).

[1749] *Hope Natural Gas*, 320 U.S. at 602.

[1750] *Id.*

[1751] *Id.* at 603.

rates for interconnection and unbundled elements that are just and reasonable.[1752] In adopting the rules that govern those rates, under *Hope Natural Gas* we must consider whether the end result of incumbent LEC rates is just and reasonable. Incumbent LECs argue that establishing a rate structure that does not permit recovery of historical or embedded costs is confiscatory. We disagree. As stated above, the Court has consistently held since *Hope Natural Gas* that it is the end result, not the method used to achieve that result, that is the issue to be addressed.[1753] Indeed, the Court has found that the "fixing of prices, like other applications of the police power, may reduce the value of the property which is being regulated. But the fact that the value is reduced does not mean that the regulation is invalid."[1754] Moreover, the Court has upheld as reasonable changes in ratemaking methodology when the change resulted in the exclusion of historical costs prudently incurred.[1755] Thus, the mere fact that an incumbent LEC may not be able to set rates that will allow it to recover a particular cost incurred in establishing its regulated network does not, in and of itself, result in confiscation.

737. Moreover, *Hope Natural Gas* requires only that the end result of our overall regulatory framework provides LECs a reasonable opportunity to recover a return on their investment. In other words, incumbent LECs' overall rates must be considered, including the revenues for other services under our jurisdiction.[1756]

738. In this proceeding, we are establishing pricing rules that should produce rates for monopoly elements and services that approximate what the incumbent LECs would be able to charge if there were a competitive market for such offerings. We believe that a forward-looking economic cost methodology enables incumbent LECs to recover a fair return on their investment, *i.e.*, just and reasonable rates. The record does not compel a contrary conclusion. No incumbent LEC has provided persuasive evidence that prices based on a forward-looking economic cost methodology would have a significant impact on its "financial integrity." We further note that at least one federal appellate court has held incremental cost-based pricing

[1752] 47 U.S.C. § 251(c)(2) and (3).

[1753] *See, e.g., Duquesne*, 488 U.S. at 310; *Hope Natural Gas*, 320 U.S. at 602.

[1754] *Hope Natural Gas*, 320 U.S. at 601.

[1755] *Duquesne*, 488 U.S. at 301-302.

[1756] However, we may not consider incumbent LECs' revenue derived from services not under our jurisdiction. *Smith v. Ill. Bell*, 282 U.S. 133 (1930).

constitutional.[1757]

739. Incumbent LECs may seek relief from the Commission's pricing methodology if they provide specific information to show that the pricing methodology, as applied to them, will result in confiscatory rates. We also do not completely foreclose the possibility that incumbent LECs will be afforded an opportunity to recover, to some extent, their embedded costs through a mechanism separate from rates for interconnection and unbundled network elements. As stated above, we intend to explore this issue in detail in our upcoming access reform proceeding.

740. GTE argues that the proper standard to review our ratemaking methodology is the just compensation standard generally reserved for takings of property. This is in effect a contention that the 1996 Act's physical collocation and unbundled network facility requirements constitute physical occupation of their property that should be deemed a taking and that must be subject to "just compensation." Assuming for the sake of argument that the physical collocation and unbundled facilities requirements do result in a taking, we nevertheless find that the ratemaking methodology we have adopted satisfies the just compensation standard. Just compensation is normally measured by the fair market value of the property subject to the taking.[1758] Just compensation is not, however, intended to permit recovery of monopoly rents.[1759] The just and reasonable rate standard of TELRIC plus a reasonable allocation of the joint and common costs of providing network elements that we are adopting attempts to replicate, with respect to bottleneck monopoly elements, the rates that would be charged in a competitive market,[1760] and, we believe, is entirely consistent with the just compensation standard. Indeed, a similar rate methodology based on incremental costs has been found to satisfy the just compensation requirement.[1761] For these reasons, we conclude that, even if the 1996 Act's physical collocation and unbundled network facility requirements constitute a taking, a forward-looking economic cost methodology satisfies the Constitution's just compensation standard.

[1757] *Metropolitan Transp. Auth. v. Interstate Commerce Commission*, 792 F.2d 287, 297 (2d Cir.), *cert. denied*, 479 U.S. 1017 (1986).

[1758] *See, e.g., United States v. Miller*, 317 U.S. 369, 374 (1943) (holding that just compensation can readily be set by ascertaining the property's fair market value, *i.e.*, "what a willing buyer would pay in cash to a willing seller").

[1759] *See, e.g., Lord Mfg. Co. v. United States*, 84 F.Supp. 748, 755-56 (Ct.Cl. 1949), *citing United States v. Corr*, 337 U.S. 325, 334 (1949).

[1760] *Compare Policy and Rules Concerning Rates for Dominant Carriers*, Further Notice of Proposed Rulemaking, CC Docket No. 87-313, 3 FCC Rcd 3195, 3200-01 (1988).

[1761] *Metropolitan Transp. Auth. v. Interstate Commerce Commission*, 792 F.2d at 297.